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AN ANALYSIS OF

WETLANDS REGULATION
AND
THE CORPS OF ENGINEERS' SECTION 404 PROGRAM
IN
WESTERN WASHINGTON

Presented to

Congress of the United States
Office of Technology Assessment
Washington, D.C. 20510

Presented by

Marc E. Boule
Shapiro and Associates, Inc.
The Smith Tower, Suite 812
506 Second Avenue
Seattle, Washington 98104

This report is one of ten regional case studies that was funded by the Office of Technology Assessment (OTA) of the U.S. Congress for use in its study, "Wetlands: Their Use and Regulation." The views expressed do not necessarily represent those of OTA. Because of regional variations in wetlands use throughout the United States, the findings made in this report may not reflect national trends that are described in the OTA report. This report has neither been reviewed nor approved by OTA's Technology Assessment Board.

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

INTRODUCTION

PURPOSES AND OBJECTIVES

METHODS

- Trends in Wetland Development
- Economic Analysis
- Questionnaires

RESULTS

- General Description of the Pacific Northwest
- Site-Specific Studies
  - Snohomish Estuary
  - Commencement Bay
  - Grays Harbor
  - Lake Washington

EXISTING CONTROLS

- Federal
  - Description of Program
  - Effectiveness of Program
- State Regulatory Programs
- Local Regulatory Programs
- Interactions and Coordination
- Problems

POTENTIAL CHANGES AND IMPLICATIONS

RECOMMENDATIONS

BIBLIOGRPAHY

TABLE OF CONTENTS (continued)

List of Figures

Figure 1	Western Washington showing regions and study sites
Figure 2	Trends in wetland conversion in Snohomish
Figure 3	Employment trends in Snohomish County
Figure 4	Trends in wetland conversion, Commencement Bay
Figure 5	Trends in wetlands conversion near Lake Washington, 1880-1982

Appendices

Appendix A	Agency Questionnaires
Appendix B	Respondents

EXECUTIVE SUMMARY

A review of historic wetland development in western Washington reveals four major trends, each associated with different aspects of economic development in the region. The four major types of economic development were: agriculture, forestry, commerce, and urbanization.

The rocky soils and irregular terrain of western Washington resulted in little suitable agricultural land. In the Puget Sound area, tidal estuaries with limited saline influence and rich peaty soils were ideal farm lands once they were diked and drained. Between 1880 and 1940, agricultural development had converted most estuarine marshes and swamps to row crops and dairy farms. Much of this farming activity continues today, although industrial development associated with nearby cities is slowly encroaching into some agricultural areas.

On the coast, timber harvest, milling, and export has been the only major eocnomic activity since early settlement. Adequate port facilities are imperative for successful export operations. Navigation channels in the large shallow embayments on the coast require constant dredging to remain open to ocean-going cargo ships. Until recent years, dredged material was discharged anywhere "out of the way"; often this was in intertidal flats or vegetated wetlands. In most cases, early wetland losses can only be estimated but are thought to be substantial. More recently, upland or deep water discharge has replaced intertidal disposal.

Two Puget Sound estuaries experienced early development as port facilities. Commercial and industrial development in both Seattle and Tacoma resulted in extensive dredging and filling of estuarine wetlands. By 1970, less than 5% of the original 4,000 acres of vegetated and unvegetated wetlands in Commencement Bay (Tacoma) remained.

The numerous lakes in western Washington have been the focus of intense urban residential development. Wetlands fringing these lakes have been gradually eliminated to create beaches, yards, and moorage areas. Lake Washington, the largest and probably earliest to be developed, has few of its original wetlands left. Economic activity around the lake, in the form of residential construction, has been controlled much more by interest rates and regional prosperity than by land use regulatory activity.

In summary, most conversion of wetland habitats in western Washington for economic activities occurred relatively early; either before 1945 or during the construction boom of the 1960's. In many locations, substantial portions of the original wetlands were converted before any regulations were implemented to limit development activities. Development pressure on the remaining areas is more a product of their convenient location and low purchase price rather than the necessity of using them.

The Section 404 program is the only federal wetland regulation and a key component in the efforts of state and local agencies to limit development in wetland areas. Although few permits are actually denied by the Corps, the program appears to function in protecting wetlands in several other ways:

- Substantial modification of some proposed projects during preapplication consultation and permit processing results in reductions of environmental impact.

- Public notice process informs state and local agencies of proposed actions, allowing other regulations to limit adverse impacts.

- Mitigation proposals negotiated with community agencies prior to permit action speed the permit process and compensate for development impacts.

- Consistent implementation of the permit program encourages proponents to consider environmental impacts in project planning.

Washington State agencies regulate wetland development activities through a variety of programs. The Hydraulic Project Approval administered by the Departments of Fisheries and Game is perhaps the most comprehensive state authority for regulating activities within the waters of the state. This regulation, however, is limited to areas below the ordinary high water line of all lakes and rivers. Thus, many adjacent or isolated wetlands are not regulated.

The Shoreline Management Act (SMA) is the other major state authority for regulating development activities in wetlands, although it is implemented primarily at the local level. SMA is an established program under the Coastal Management Act to plan and regulate development activities on the shorelines of the state. Permitted uses under SMA are required to "minimize any resultant damage to the ecology and environment of the shoreline area," including adjacent wetlands.

The Clean Water Act also provides two other mechanisms for regulating wetland development activities. Section 401 requires that the state must certify that the materials to be discharged comply with water quality provisions of the Act. The state is also responsible for regulating the discharge of garbage and other solid waste. However, the state has identified some difficulties in regulating the discharge of woodwaste into wetland areas.

Most cities and counties control wetland development through the Shoreline Master Program (SMP), which is the local implementation of SMA. The SMP is a land use planning and management tool that local governments may use to direct development activities toward or away from certain coastline areas. SMP's have no authority in small lakes (less than 20 acres) or streams (less than 20 cfs), or isolated wetlands. One local jurisdiction has recently enacted a sensitive areas ordinance giving it authority to regulate any development activities in certain wetland in the county.

The Public Interest Review under Section 404 is the major mechanism for coordination of federal, state, local, and general public concerns. Often this is the only way some agencies or groups can make their concerns known. In addition, the public notice issued by the Corps is often the first time some agencies learn a project has been proposed. At present, there is no process of coordinated review involving all agencies with concerns or jurisdiction relating to 404 permits. Until recently, an informal group met to

discuss permit applications and provide a forum for proponents to discuss agency concerns. Although that group is no longer active, the state is presently working to establish a review procedure for 404 and state permits which would involve all of the state agencies.

The Grays Harbor Estuary Management Plan was developed to provide some predictability in regulatory activities in that estuary. Although the Plan has not been finalized or officially accepted, it does provide some guidance to agencies as they review permit applications. Several major controversies remain in the Plan with regard to EPA participation and with respect to how binding it will be on federal agencies with responsibility for implementing or reviewing Section 404 permit procedures. The Corps is also concerned about requests to establish general permits for activities recognized in the Plan.

The Seattle District has prepared a wetland review for the Snohomish Estuary, one of the study areas discussed in this report. The goal was to provide a comprehensive inventory of wetland habitats, a discussion of existing regulatory controls, and recommendations for wetland protection within the estuary. The review has been used to aid in the determination of Corps jurisdiction under Section 404, to inform applicants of issues of concern in the area, and to suggest methods for minimizing the impacts of proposed projects. The review has also been used by local governments to evaluate permits under the Shoreline Master Program, especially where the staff lacks the expertise to assess habitats' values and identify potential impacts in a comprehensive manner.

Major problems with the Section 404 program which were identified include activities not regulated, inadequate coordination with local agencies, and gaps and overlaps in jurisdiction. Activities of concern were dredging and draining, forest practices, and the discharge of woodwaste or garbage. Coordination problems centered around the review process and the pre-application stage. Gaps in jurisdiction were identified in areas above the headwaters where environmental regulation is extremely limited. The overlap in regulatory authority was identified as a problem primarily by private sector development interests. Inadequate or uneven enforcement was also identified as an area of concern. Although there was some mention of delays in permit processing, these were generally attributed to difficulties the state had with CZM consistency or 401 certification processes.

Changes which have been suggested for the 404 program include state assumption, reduction of jurisdiction, and improved formal coordination. The feasibility of assumption of 404 authority is presently being evaluated by the Department of Ecology. The major obstacle appears to be that existing regulatory and management programs do not provide adequate record-keeping, jurisdictional extent or enforcement to fulfill the requirements for assumption. Further analysis is being conducted to evaluate this concern. The State has indicated that the regulations for assumption are both complex and difficult to fulfill. The State additionally indicated a desire that the jurisdiction over activities in "traditionally navigable" waters also be transferred. Although federal agencies would officially support state assumption, some personnel question the State's technical or fiscal capabilities to handle the program. Similar concerns were expressed

at the local level. Although no local governments expressed an interest in acquiring Section 404 authority, some private development interests expressed a desire for coordination of wetland regulation at the local level. Reduction of 404 jurisdiction to "traditionally navigable" waters has been suggested in several legislative and executive proposals. This suggestion was regarded almost universally as inappropriate and potentially disastrous for the integrity of the nation's waters. Suggestions for improved formal coordination in the form of a "one-stop" permit or "joint processing" were received with equally intense positive enthusiasm.

INTRODUCTION

The Clean Water Act was enacted to "restore and maintain the chemical, physical and biological integrity of the nation's waters." One goal of the Act was to attain "water quality which provides for the protection and propagation of fish, shellfish and wildlife..." In order to achieve this goal, the Secretary of the Army was given the authority to issue permits for the discharge of dredged or fill materials into the waters of the United States, including adjacent wetlands, under Section 404 of the Act. Section 404 has since become the primary federal regulation controlling development activities in wetland areas.

With the upcoming reauthorization of the Clean Water Act and the current controversy over the Section 404 program, the Office of Technology Assessment (OTA), a non-partisan analytical support agency serving the U.S. Congress, was asked to conduct a study of the current status of wetland regulation. Much of the controversy about the Section 404 program is the result of feelings that it creates an excessive regulatory burden on development activities. In addition, there is considerable disagreement concerning the original intent of Congress in establishing the 404 program. Three major issues which must be resolved by Congress have been identified. These are:

- What level of protection should be provided to wetlands?
- What is the appropriate level of costs that should be borne by regulated sectors of society to protect wetlands?
- What is the desired mix of governmental responsibilities for wetland protection?

The OTA study is intended to provide Congress with the information necessary to resolve these issues.

As a part of its study, OTA determined to analyze how the use of wetlands was being controlled around the country. In particular:

- How well do Section 404 and other federal programs control the use of wetlands?
- What capabilities do state and local programs have to control the use of wetlands?

In order to complete the analysis, OTA commissioned nine case studies around the nation to investigate these questions. This report is the result of the case study conducted in western Washington.

Each of the case study areas has its own unique characteristics which distinguish it from all the others. In western Washington, these characteristics are physical, climatological, and political. The steep, rugged terrain and fjord-like features of Puget Sound limit major wetlands to estuarine river mouths and inland lake shores. The mild maritime climate

with almost year-round rainfall combined with shallow, impervious glacial soils supports wetland habitats in almost every little swale and depression. Finally, Washington enacted one of the first coastal management programs, oriented toward protection of unique and fragile shoreline habitats such as wetlands. In addition, some historical factors may also be significant with respect to the issues discussed in this report. As a relatively young state, development and use of wetland areas is a relatively recent occurrence. The effects and significance of each of these factors is considered and evaluated in this report.

PURPOSES AND OBJECTIVES

In order to provide background for the two questions posed in the introduction, two different investigations have been undertaken. The first is an analysis of trends in wetland use or conversion in the region. The second is a description of the various environmental regulations which influence wetlands development in the region. There is also a short evaluation of potential changes in the Section 404 regulatory program.

In order to assert all the effects of Section 404 and other wetlands regulatory programs on the factors responsible for wetland development, it was first necessary to identify the trends in wetland losses. Knowing these trends for several different study sites, it was possible to correlate them with local economic activities and environmental regulations. Thus, the economic factors which historically used wetland areas could be identified. In addition, any influence on those factors by environmental regulation could also be determined. Finally, potential future development pressures on wetland areas could be predicted.

Section 404 is one of several regulations at the federal, state, or local level which might influence development activities occurring in wetlands. It was necessary to identify each of these and determine their jurisdiction and processes. It was possible to evaluate the overlap, conflict, and gaps between each of these regulatory activities and the Section 404 program. Furthermore, the emphasis of each regulatory program and its importance to the entire regulatory matrix could be determined.

Finally, potential changes to the Section 404 program were investigated. Of particular interest were those changes which have been suggested by various legislative or political interests. The potential effects of these changes were evaluated, particularly with regard to trends in wetland use and effective management of the wetland resource.

It was assumed that the people responsible for implementing the various regulatory programs could provide the most accurate description of the processes and authorities associated with their own program. Furthermore, they would provide a diversity of opinions on the conflicts, gaps, and overlaps of the diverse programs. Thus, a series of questionnaires was developed to sample this wide selection of regulatory programs. The questionnaires, and subsequent conversations provided a comprehensive view of the regulatory programs. Furthermore, since many of these agency personnel are extremely knowledgeable about wetlands development in the state, they were able to confirm conclusions about wetland trends and suggest other explanations or information sources.

Thus, one purpose of these investigations was to collect and consolidate widely scattered data relating to wetland changes in the region and the factors, both economic and environmental, which influenced them. The other major purpose was to allow those people most familiar with wetland regulatory activities to voice, not only their descriptions of their programs, but also their perceptions of the problems and conflicts.

It should be noted that the authors also desired to express the concerns of development interests who must deal with the regulatory processes. Thus, a questionnaire was also developed to identify their concerns. The following report is a consolidation of the many conversations which were conducted with a great number and variety of helpful individuals.

METHODS

Trends in Wetland Development

An overview of wetland ecosystems and development patterns in Western Washington resulted in identification of four major scenarios. No detailed analysis of these scenarios has been performed, either for this study or previously (although there is some discussion in Bortleson, et al 1980), but discussions were conducted with numerous individuals knowledgeable about wetlands and development activities in the area. There is a general consensus that the scenarios provide a reasonable summary of wetland development in the region.

To the extent possible, study sites were selected because some data were already available on the distribution of wetlands and the history of development activities. The work of Bortleson, et al (1980) provides a summary of total wetland losses for 10 estuaries of western Washington, but no discussion of historical trends. The Snohomish Estuary Wetland Study (Shapiro/Driscoll, 1978) includes a detailed analysis of wetland development in that estuary based on interpretation of historic maps and aerial photographs.

Studies of the geology (Hart-Crowser, 1982) and land use (Dames and Moore, 1981) of Commencement Bay included historic maps of the Puyallup estuary showing the distribution of development activities. Planimetric analysis of those maps generated the data on trends of wetland development shown in Figure 3.

The U.S. Fish and Wildlife Service prepared a study of wetland development around Lake Washington (Ellman and Schuett-Hames, 1978). Data from this study were augmented by the results of several site specific wetland inventories (Shapiro, 1981a; Austrian and Dybdahl, 1981) and discussions with several local planning officials.

Initial data on distribution of wetlands in Grays Harbor were taken from Smith, et al. (1976). These were augmented by a planimetric analysis of historic navigation charts, a review of Corps dredging plans, and discussions with Corps staff and local planning officials.

Economic Analysis

Several texts on the economic history of Washington were reviewed to provide an overview of long-term economic trends. In addition, employment records from the Washington Department of Employment Security were used to analyze economic trends of the study sites. The results of these investigations indicated that further, more detailed analyses could not be conducted within the scope of this project; furthermore, the results would not provide additional valuable information.

Questionnaires

A series of questionnaires was developed concerning wetland development activities and regulatory programs in western Washington. The OTA questionnaires for the Corps and for state agencies were used as a basis; they were enlarged and refined to apply more specifically to local wetland issues. Furthermore, different questionnaires were developed for the Corps, other federal agencies, state agencies, local agencies, and private developers (all five questionnaires are included as Appendix A). Respondents were contacted by telephone in order to simplify and hasten their responses.

Often, responses to the questionnaires were considered to state the issue more eloquently than could have the authors. These statements are scattered throughout the document as unattributed quotes. Although unattributed (generally at the respondent's request), they are nonetheless a tribute to the many respondents who made this report possible.

RESULTS

General Description of the Study Area

The classic and often repeated view of the Pacific Northwest is dominated by tall mountains and steep terrain densely covered by evergreen forests of fir, hemlock, and cedar--all of this clothed by gray skies and incessant rainfall. While the view is essentially accurate for the western Washington study area, it should be noted that east of the Cascade Mountains, the northwest is more often characterized by sagebrush and grasslands; cold, dry winters and hot, dry summers.

Ocean and stream resources (fisheries) and timber have historically been the economic base of the Pacific Northwest. In addition, the maritime climate supports farming and dairy activities, which have contributed to the economy since the state was formed in 1889. Historically, the major industry has been logging and lumbering. Puget Sound is a natural harbor and shipping and trade, both domestic and foreign, became important in the mid-nineteenth century.

Prior to the completion of the railroad, access to western Washington was difficult except by sea. Early trade existed between San Francisco and Puget Sound; lumber was shipped to San Francisco in exchange for various industrial and domestic goods to supply the growing population of Washington. Although fishing was important to the people of the state, the primary bargaining resource was Washington's lumber and wood products. Several factors contributed to the development of western Washington as a major shipping and trade center. The sailing distance to the Orient and Russia is less than from any other port on the Pacific coast; completion of the railroad to western Washington established Seattle and Tacoma as gateways to the Orient. By 1921, more than 50% of all commerce from the Pacific coast passed through Washington and the Port of Seattle had the largest commercial pier in the world (Meeker, 1921).

The major manufacturing industries during the pre-World War II and war years were lumber and wood products, food processing, especially canning of fish and produce, and the airplane and associated products. With the growth of the airplane industry, the region became increasingly dependent on military spending. The economy boomed during wartime and waned when military aircraft were not needed. Meanwhile, the forest products industry became more diversified; pulp and paper, finished wood products and wood research expanded the economic base.

The trend in the past two decades has been toward development of "footloose" industries related in some fashion to the booming aircraft industry, specifically Boeing Company. Such industries include airplane and missile production, electronics, central offices, aluminum, steel and machinery. Recreation and the production of recreation products has also become important to the economy.

Western Washington has been selected as the area for this study both for its consistency of regulatory activity at federal and state level, and its diversity of wetland types and development pressures. Throughout the

study area, the same regulations are implemented at the federal and state levels and, for the most part, the same personalities are responsible for implementing them. Differences in regulation and personalities exist primarily at the local level.

In contrast, there are significant differences in wetland systems and the development pressures associated with them. (Figure 1 depicts the regions of western Washington and identifies the study areas.) The northwest corner of Washington is a maze of islands and interconnecting fjord-like waterways. The entire area is often referred to as the Puget Sound region. Tidal wetlands are limited to river mouths where extensive intertidal lands and substantial freshwater runoff combine to characterize the ecosystem (Boule', 1981). (Although only the southern portion of the area can be accurately called Puget Sound, the term will be used here for purposes of simplicity.)

Along the Washington coast, the Pacific Ocean dominates the wetlands, although freshwater runoff is still a major component. Here, tidal wetlands are found in large embayments with extensive intertidal flats. Although freshwater runoff is substantial here also, the wetlands are much more saline than those of the Puget Sound area.

Non-tidal inland wetlands are also common in the region. Many are forested or shrub swamps in saturated (not inundated) soils and often are unrecognized as wetland habitats by untrained observers. Perhaps the most well known of inland wetlands, however, are those found on the shores of the innumerable lakes of western Washington. Often these are small embayments or narrow shoreline areas dominated by cattails, tules, or water lilies.

Just as the types of wetland ecosystems vary in the region, the development pressures also vary. In much of the Puget Sound region, early development of estuarine wetlands was oriented toward creating agricultural lands. The rich peaty soils were often the only flat ground available for tilling. In addition, wetlands lacked the rocks and clay of adjacent upland areas. Furthermore, their close proximity to waterways, the major travel corridors of the time, made them prime areas for development. Early construction of dikes and drainage ditches created vast acreages of farmland from the marshes and swamps of the numerous estuaries. In much of the Puget Sound region, this agricultural activity continues today.

In a few areas, early industrial and port development precluded major agricultural activities. In Seattle and Tacoma, river mouth areas were dredged to provide navigation channels and filled to create locations for wharves, warehouses and industries. In these areas, early agriculture was established farther upriver, but still close to the urban centers which spawned the industrial activities.

Along the coast, the timber industry dominated early economic activities and still does today. Cutting, milling, and shipping lumber are the major industries. Neither agriculture nor urban development are as important. The export of lumber requires navigation channels. In these shallow bays regular dredging is necessary to maintain the channels. Historically, dredge material was disposed of in any place that was "out of the way." Often this was nearby intertidal flats or marshes, unvegetated and vegetated

Figure 1. Western Washington. Location of the four study areas.

wetlands. Frequently, it was close to port facilities, thus creating more flatland for port expansion. In recent years, however, the dredging projects of the Corps of Engineers have been oriented toward upland or deep water disposal.

In contrast to tidal wetlands, lakeshore wetlands of western Washington have been developed almost exclusively for residential purposes. Initially, these were summer homes, but with urban growth, many of the lakes have been incorporated into nearby cities. As this happens, summer home development expands to lakes further from urban centers. Residential development may include: bulkhead construction and filling to establish a yard; clearing and minor filling with sand to create a beach; minor dredging for boat access; or simply continual mowing to create a lawn. In each case the alterations may be minor, but the cumulative effect is elimination of wetlands along most, if not all, of the lake shore.

In each of the wetlands systems described, the economic and physical factors leading to development of the wetlands are very different, both in goal and scale. Many of the individual factors are not unique to western Washington. The combination of factors is unique, however, and should be considered in any comparison of wetland development on a nation-wide basis. Important factors include:

- Relative youth of settlement in the Pacific Northwest;
- Rugged terrain which limited overland travel and available agricultural land;
- Early dominance of fishing and timber industries;
- Boom conditions created by the Alaska gold rush, proximity to Pacific Rim countries, and railroal terminals, and associated demand for port facilities; and
- Economic dependence on the aerospace industry since World War II and rapid population growth over the last two decades.

Site Specific Studies

Snohomish Estuary

The Snohomish is the third largest river entering the Puget Sound region (behind the Fraser River in British Columbia and the Skagit River). The estuary is located about 35 miles north of Seattle (see Figure 1) and consists of four anastamosing channels (or sloughs) separating six major islands. The City of Everett, at the river's mouth, is the northern limit of western Washington's major urban area, which includes Seattle, Tacoma, and Olympia to the south.

The 10,000 acre estuarine system is a classic example of the agriculture-dominated scenario discussed in the previous section. Earliest settlement began around 1880 with diking of small portions of wetland on several islands. During the next 60 years, diking activities slowly converted most

of five islands, almost 9,000 acres of wetland, into farmland. As is apparent from Figure 2, almost all wetland conversion prior to World War II can be attributed to agricultural expansion; essentially no filling occurred during this period.

Prior to the war, the mills and port facilities at Everett were limited mostly to upland areas where piers could be extended out to deep water. Industrial and port expansion began just before the war and continues to the present time. Much of this expansion has entailed the filling of intertidal flats and marshes to provide the space required by modern manufacturing and shipping facilities. Furthermore, as a result of the development of large scale earth-moving machinery, fill became much more cost effective than piers and piling as a means of constructing near-shore foundations. Figure 2 shows the wetland loss associated with this slow but steady expansion of industrial activity since 1940. Although the area involved is much smaller than that used previously for agriculture, two aspects of the industrial development of wetlands have major impacts. First, filling is a much more permanent elimination of wetland habitat; diking impacts can be readily reversed by breaching the dike. Second, the result of industrial development was the filling of some of the last wetlands of the estuary.

Since about 1965, there has been a slow, steady filling of wetlands on one island in the estuary with urban waste. The site was closed about 1979 after almost 200 acres had been filled. This was the major fill activity within the estuary at that time. During the same period, most industrial activities and the associated fills occurred on the shores of Port Gardner, not in the estuary. Most of these fills were in unvegetated flats, although a few vegetated wetland areas were also filled. These fills totaled approximately 60 acres between 1970 and 1980. Other than the solid waste disposal site, wetland fill activities within the estuary between 1970 and 1980 were generally small in scale, scattered, and infrequent. Less than 70 acres of vegetated wetlands within the estuary were filled during the decade; two woodwaste and dredge material disposal sites account for almost 50 acres.

One other interesting phenomenon is apparent in Figure 2. Wetland area actually increased in the Snohomish estuary between 1947 and 1970. This was caused by several dikes being breached during floods and not being repaired. As a result, agricultural lands reverted to wetland habitats. This suggests that agricultural use of the land at that time was not sufficiently productive, economically, to justify repairing the dikes. This occurred at the same time that industrial activities were beginning to fill other wetland areas.

As with most of western Washington, early economic activity in the Snohomish area was dominated by agriculture, fishing and timber harvest. Industrial activities were primarily food processing and lumber milling. Since 1940, two paper mills and several wood products manufacturers have expanded the economy somewhat. A few small shipbuilding and foundry facilities are also present, but these are a very small portion of the economic activity. Elsewhere in the city, the aircraft industry dominates economic activity. In Figure 3, the employment statistics for the Everett area show how closely the local economy and total manufacturing correlate with the aircraft industry.

Figure 2.

Trends in Land Use and Wetland Conversion in the Snohomish Estuary 1884 - 1982

Source: Shapiro/Driscoll, 1979

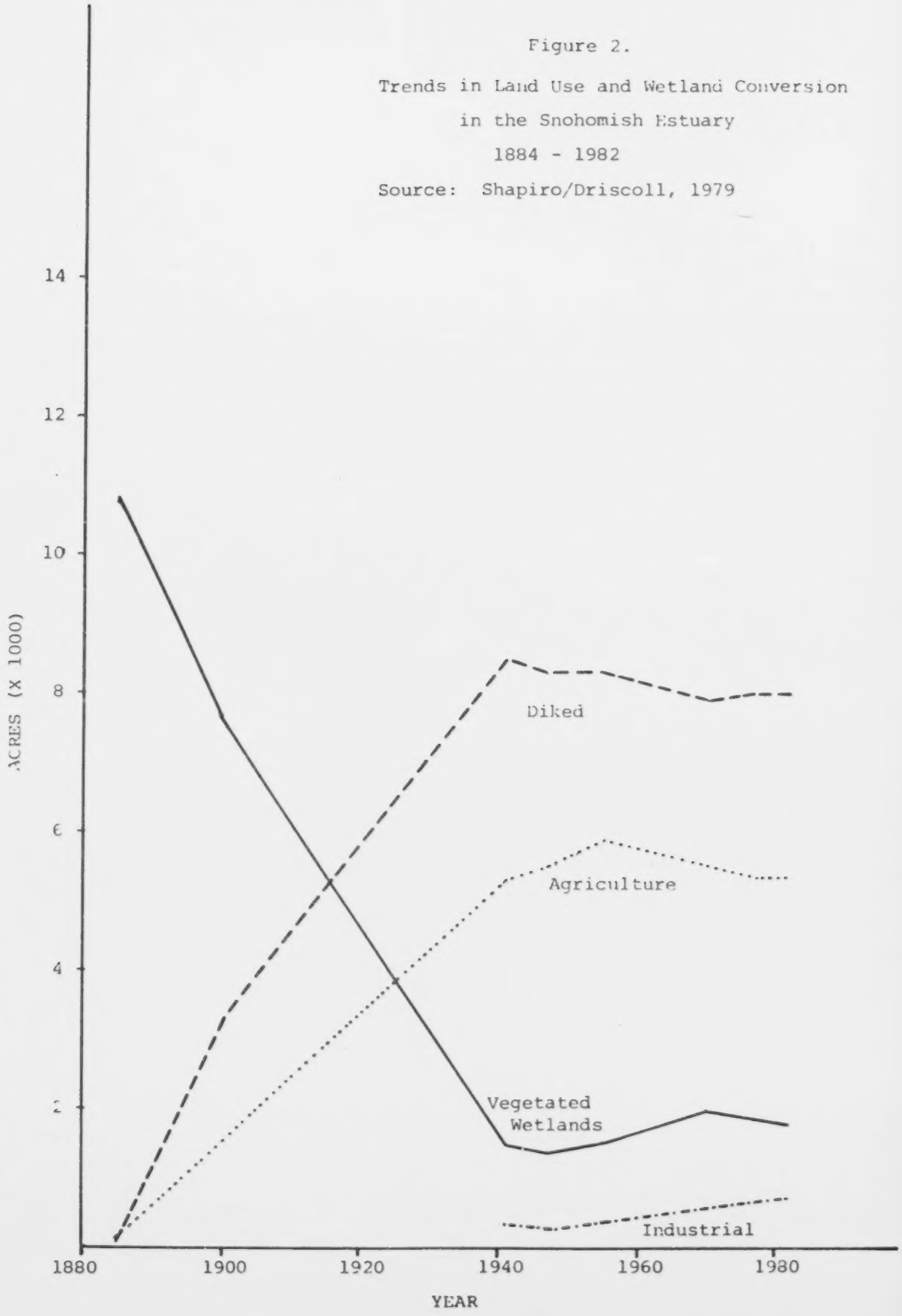
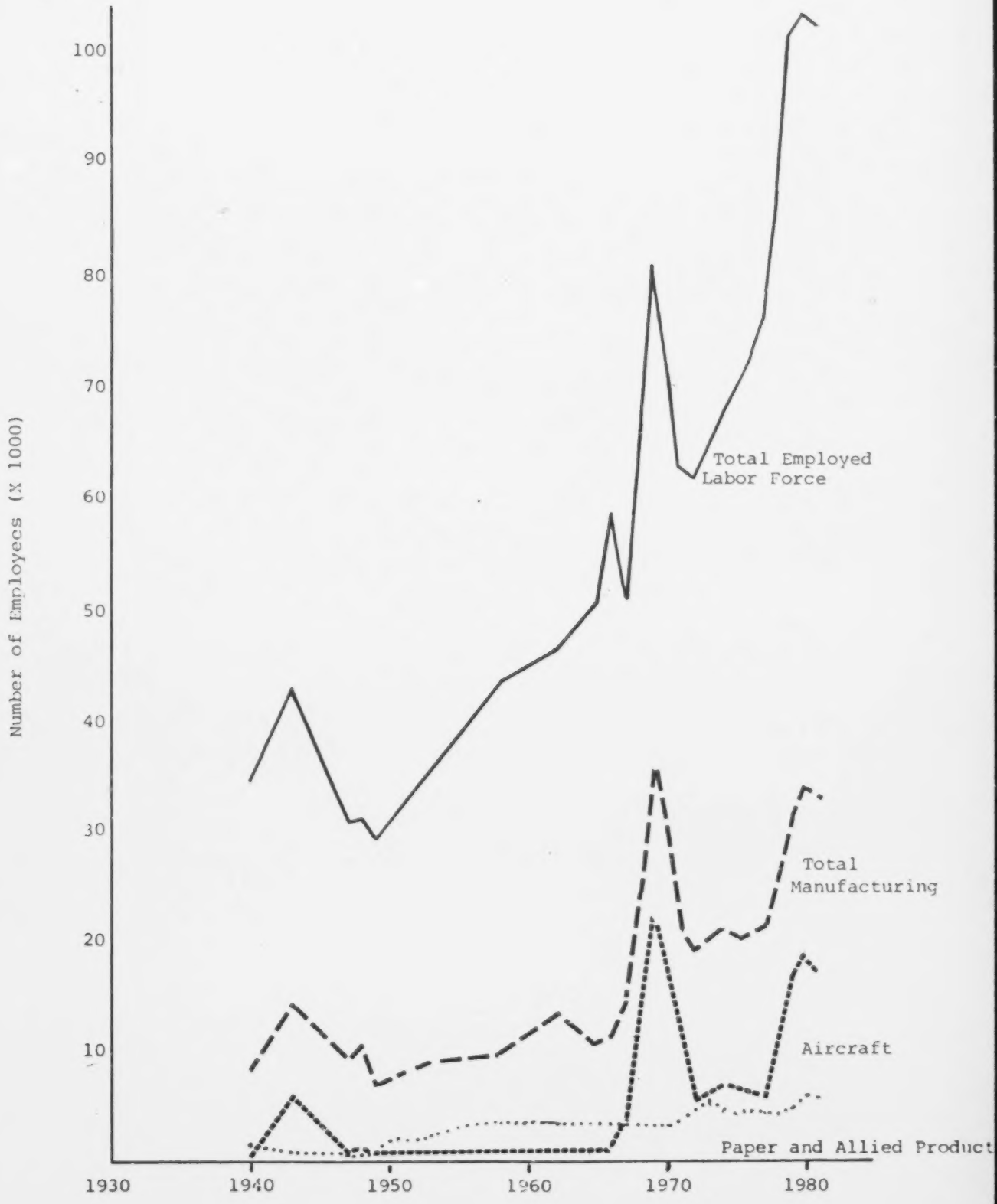


Figure 3. Employment For Snohomish County
Source: Washington State Employment Security Department



As is apparent, most of the wetland losses in the Snohomish area can be attributed to early agricultural development in the region. The tidal freshwater conditions of the region's estuaries meant that there were no concentrations of salt in the soils; thus, diking and draining converted wetlands to farmlands. At the time, of course, there were no regulations to limit development of wetland areas. Furthermore, there was a strong ethic throughout the country to control and develop the land. Clearly, the conversion of wetland (wastelands) to productive agricultural lands fulfilled that ethic.

Commencement Bay

The estuary at the mouth of the Puyallup River provides an example of early industrial development in Puget Sound region tidal wetlands. The Port of Tacoma on Commencement Bay, like the Port of Seattle 30 miles to the north, developed as a commercial center soon after settlement began. The deep waters of the bay immediately adjacent to broad expanses of tidal unvegetated flats and vegetated wetlands represented prime conditions for port facilities.

Pierce County, including the City of Tacoma, had a population of about 3,300 in 1880. The transcontinental railroad was completed to Tacoma in 1887; by 1890 the county population was over 50,000. Completion of the railroad to Tacoma was a major impetus for the growth of the Port of Tacoma. Lumber, coke and fish were major commodities for export. Construction of a copper smelter on the shore of Commencement Bay in the early 20th Century was a precursor of the numerous chemical processing plants present at the Port today. By World War I, Tacoma was a major industrial community in western Washington with a substantial port facility.

Waterways were dredged through the flats and marshes and the dredged material discharged onto adjacent wetland areas, creating both protected moorages and abundant flat upland areas from vegetated and unvegetated wetlands. Dredge and fill activities began at the river mouth and expanded upriver as more facilities were developed. Figure 4 shows the continual conversion of unvegetated flats and vegetated wetlands to port facilities from 1880 to the present. Of about 1,700 acres of intertidal flats in 1880, 1,500 had been dredged or filled by 1920. Between 1880 and 1940, about 1,900 acres of vegetated wetlands were filled. By 1980, only 216 acres of wetlands existed in the estuary (Shapiro and Associates, 1981b); 95 acres of these were isolated depressions in fill material which were maintained by upland runoff and 97 acres were unvegetated flats. Only 14 of the original 1900 acres of marsh in the estuary remain today.

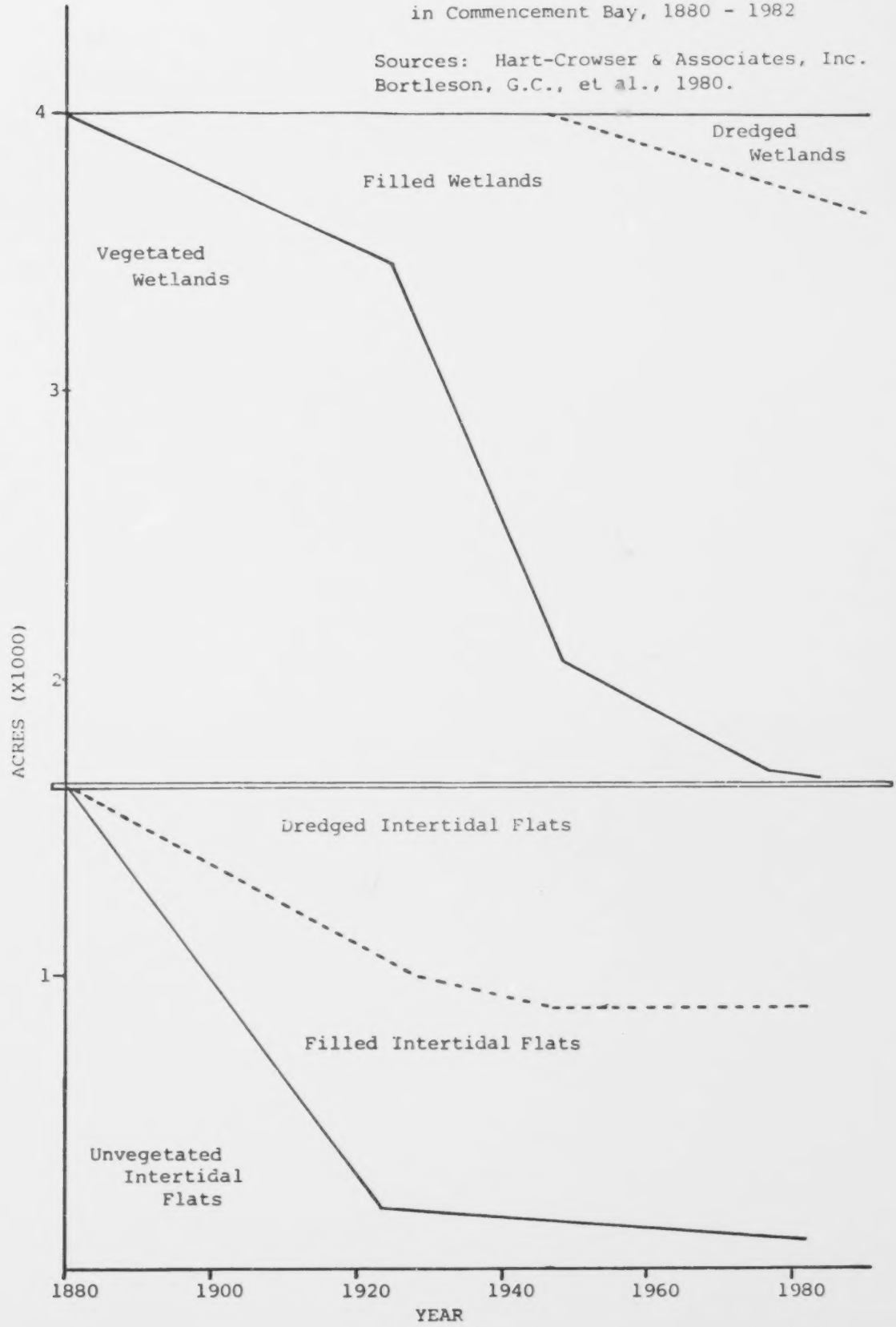
Grays Harbor

One of two large embayments on the Washington coast, this area has a history of wetland development very different from that just described for the estuaries of the Puget Sound region. Grays Harbor has never been a major urban center. It is, however, the economic center of a major timber harvesting area. Since its first settlement, it has existed almost exclusively as a logging and lumber export area.

Figure 4.

Trends in Land Use and Wetland Conversion in Commencement Bay, 1880 - 1982

Sources: Hart-Crowser & Associates, Inc.
Bortleson, G.C., et al., 1980.



Lumber export requires modern accessible port facilities to remain a viable industry. In Grays Harbor, almost continual dredging is required to maintain a navigation channel through the shallow bay. The dredging activities have required the discharge of immense quantities of material. In early years this was deposited close to the channel; later confined "spoil areas" were constructed on nearby tidal flats or marshes. Today, most of the material is disposed of on upland sites or in deep water offshore.

There is very little precise data on the historic or present extent of wetland habitats in Grays Harbor. Thom (1981) estimates the present surface area at about 50,000 acres, and notes that about 58% of the bay is intertidal flats. Thom (1981) also estimates there are about 3,400 acres of marsh in the estuary. Examination of historic and recent navigation charts suggests that there has been a trend toward increases in intertidal flats and marshes, and a consequent decrease in open water since 1890. This can probably be attributed both to increased siltation and redistribution of sediments by dredging activities. Although the extent of wetlands, either past or present, has not been precisely determined, some losses can be identified. Approximately 500 acres of flats were converted to uplands prior to 1916. Between 1916 and 1942, all dredged material was deposited in deep water within the harbor. Between 1940 and 1975, about 3,800 acres of intertidal area were used for dredge material disposal. The Corps reverted to deep water or upland disposal in about 1976. Although there have been no wetland losses due to dredged material disposal since 1976, approximately 500 acres of fill are proposed as part of the Grays Harbor Estuary Management Plan. About 90 acres of this is vegetated wetlands, the remainder is intertidal flats.

The long history of dredged material disposal has created several large tracts of upland suitable for development of port facilities. It also appears to have contributed to an attitude that filling wetlands with dredged material to create upland sites for port development is a reasonable and acceptable approach. In recent years, the conflict between the economic and environmental concerns relating to this attitude has become a major controversy in the region. The Grays Harbor Estuary Management Plan (see Existing Controls section) is an attempt to reconcile those differences.

Lake Washington

Forming the eastern boundary of the city of Seattle, the 35-square mile Lake Washington is the largest lake in the state. Urban development, primarily residential, completely surrounds the lake, with only a few enclaves of park or undeveloped land remaining. The recent history of urban development around the lake parallels that of many lakes in western Washington.

Early settlement of the lake began with homesteads and small farms all along the shore. Often marshes and swamps were converted to orchards or other agriculture (Hockett, 1976). Coal mining in areas to the south and east in the 1870's led to hopes for factories and industrial activities around the lake. Before this could occur, the era of coal-fired boilers ended, and with it the dreams for industrial development. Establishment of regular ferry service across the lake by 1913 was the impetus for urbanization of the east shore.

Approximately 2,300 acres of wetlands are depicted on a 1902 map of the lake. In 1916 the lake was lowered approximately 8 feet as part of a major public works project, which connected the lake to Puget Sound via the Chittendon Locks. A 1936 map indicates there were about 1,400 acres of wetlands around the lake, concentrated in about 10 major areas (Ellman and Schuett-Hames, 1978). Since 1936, about 500 acres have been filled, primarily for urban residential or commercial activities. Figure 5 shows the decline in wetlands around the lake since 1916.

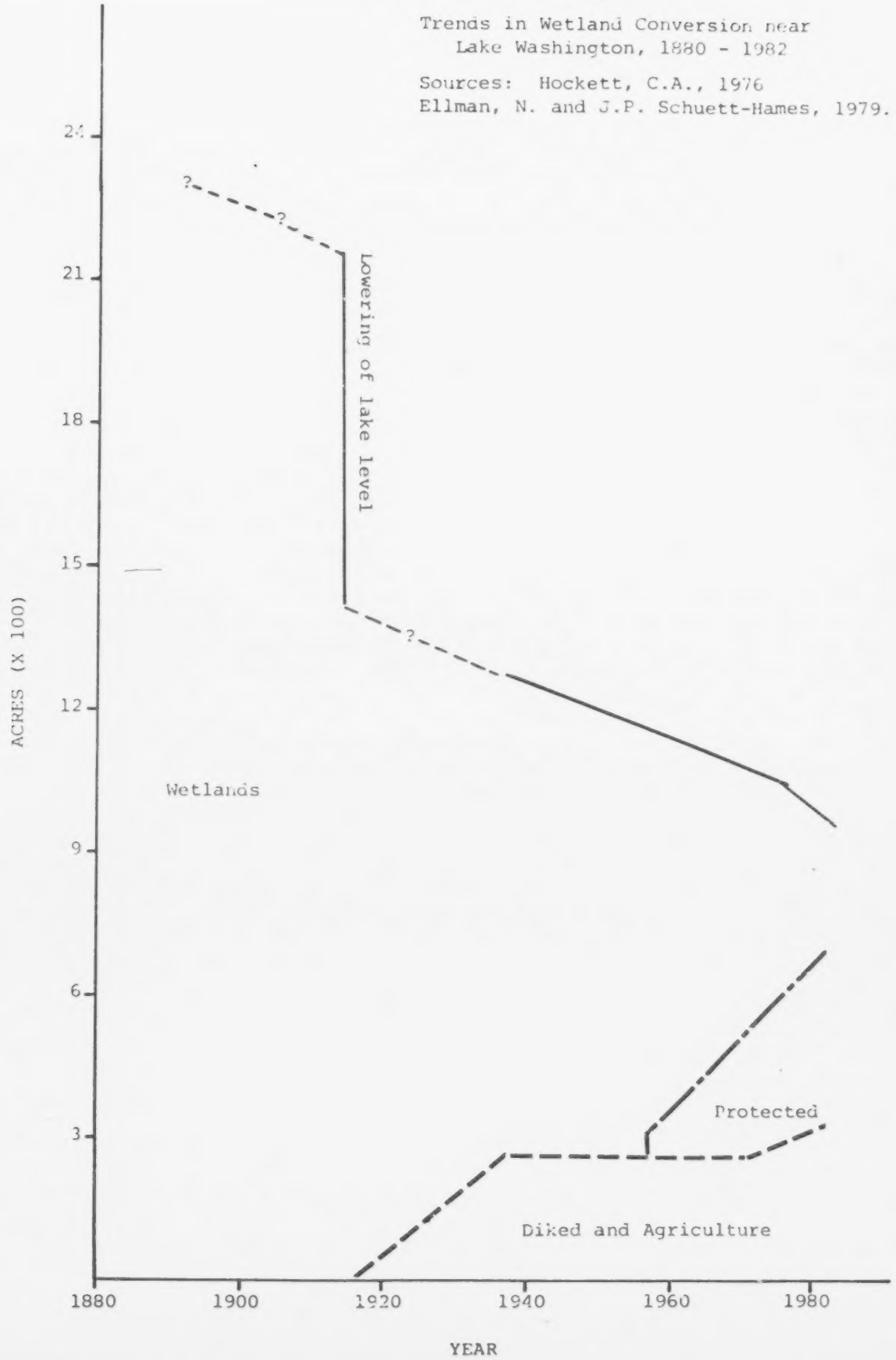
It should be noted that while early development of wetland areas on the lake involved complete use of the land, recent developments have been more limited. Since implementation of the Shoreline Management Act (see Existing Controls section), most development activities have included permanent dedication of a portion of the wetlands for preservation of the habitats.

An analysis of economic activity, particularly that associated with urban development does not show any correlation with wetland regulatory programs. It is not possible to differentiate the employment data associated with construction occurring on the shore of Lake Washington from that occurring elsewhere in King County. Furthermore, construction activities, particularly residential construction, are much more responsive to interest rates and regional economic activity than they are to environmental regulation. The major declines in construction activity in King County in the last 20 years are readily correlated with the "Boeing Bust" of 1968-72 and more recently with high interest rates.

Figure 5.

Trends in Wetland Conversion near Lake Washington, 1880 - 1982

Sources: Hockett, C.A., 1976
Ellman, N. and J.P. Schuett-Hames, 1979.



EXISTING CONTROLS

In western Washington, activities in wetland habitats are directly or indirectly controlled by a variety of federal, state and local regulations. Often this collection of regulations creates conflict or confusion between governmental agencies and development interests. The lack of a single, universally accepted and unified regulatory approach can lead to conflicting or ambiguous agency responses, angry and frustrated developers, substantial delays to construction activities and occasionally the illegal and clandestine destruction of major wetland areas.

In the following, the issues concerning regulation of these and other development activitites in wetland areas are discussed. In order to aid the understanding of the issues, the following discussion is divided into four sections. First, the regulatory activities of each agency are described. Second, coordination between the various agencies is discussed. Third, the problems and conflicts between agencies are identified. Finally, a summary is presented to consolidate the material presented.

Federal Wetland Regulatory Program

Section 404 Program

Description

The U.S. Army Corps of Engineers is responsible for implementing two permit programs which regulate development activities in waters of the United States. Section 10 of the River and Harbor Act of 1899 gives the Corps regulatory authority over any action in navigable waters of the United States. Section 404 of the Clean Water Act regulates the discharge of dredged or fill material in all waters of the United States and adjacent wetlands; Section 404 is the principal program of concern in this report. Under Section 404, the Corps regulates, through a permit program, the discharge of all dredged or fill material if the "purpose is to convert an area into a use to which it was not previously subject" (33 CFR 323.4(c)). As part of their permit program, the Corps has issued a nationwide permit for the discharge of dredged or fill material above the headwaters of streams. Headwaters are defined as the point on a non-tidal creek with an annual flow of less than 5 cfs.

In addition to the nationwide permit, the Corps also has a process for issuing general permits. General permits are usually issued for specific types of disposal activities in specific areas. The Seattle District has issued very few general permits for Section 404 activities; most of these are conditions to disallow fill in vegetated wetlands. General permits have been issued to the State Department of Fisheries for minor diversion structures associated with fish hatcheries and for disposal of gravel to enhance salmon spawning habitat. At present, the District is also evaluating the possibility of issuing a general permit for filling activities in Grays Harbor (see Grays Harbor Estuary Management Plan).

As a result of the "primary purpose" criterion mentioned above, the Corps does not regulate the disposal of waste materials, such as garbage or woodwaste. According to regulations promulgated by the Corps, discharge of waste material is regulated under Section 402 of the Clean Water Act (33 CFR 320.2(d). In Washington, responsibility for Section 402 has been transferred to the Washington Department of Ecology (WDE) as part of the National Pollutant Discharge Elmination System (see Washington State Wetland Regulatory Program and Problems in this section).

In the previous section, four wetland development scenarios which are common in western Washington were described. These scenarios do not attempt to describe every type of wetland development activity which has occurred, but rather those which probably have been most responsible for wetland losses in the region. As noted, most of the wetland losses described occurred prior to implementation of the Section 404 program; nonetheless, most of the development activities probably would be considered subject to 404 regulation if they occurred today. Certainly, wetland fills to create port and industrial facilities or residential areas are regulated under Section 404. Disposal of dredge material is also subject to Section 404 authority. Although no longer an economically feasible activity, construction of dikes to create agricultural lands would probably also be regulated by the 404 program (33 CFR 323.4(a)1). In contrast, the discharge of fill into existing agricultural lands created from wetlands in order to develop industrial sites is not regulated by Section 404, unless the agricultural lands are identified as wetlands at the present time. Some agency personnel have also questioned whether, through application of the "primary purpose" criterion, the Corps might also refrain from exercising 404 jurisdiction over creation of dikes around solid waste disposal sites. Regulatory functions' personnel in the Seattle District assert that such dikes are regulated.

Under the 404 regulatory program guidelines, the Corps must issue a public notice on any permit application received. A public notice is also required for any general permit, but not for nationwide permits. The public notice is the official announcement that the "public interest review" of a proposed action has begun. The notice is sent to EPA, FWS, NMFS, all state and local agencies with potential jurisdiction and public groups and individuals with concerns over the proposed development activity. Based on comments received during the public review, the District Engineer must decide to issue or deny a permit.

The Environmental Protection Agency (EPA) is responsible for development of the 404(b)(1) guidelines used by the Corps to evaluate the effects of the discharge of dredged or fill material in any project proposed under Section 404. Traditionally, EPA has also been a major source of comments on proposed activities during the public interest review. If EPA has major objections to a permit that the District Engineer (DE) has decided to issue, two alternative actions are available. Under Section 404(c) of the Clean Water Act, the EPA Administrator may prohibit the discharge of dredge or fill material at any site where it is determined independently that unacceptable adverse environmental impacts would occur. This is referred to commonly as the EPA veto authority over a 404 permit. In addition, the 7 July 1982 Memorandum of Agreement (MOA) between EPA and the Department of

the Army describes a procedure whereby EPA may request that the DE's decision be reviewed by higher authority within the Army. The review by higher authority is referred to as "elevation" and may only occur if EPA finds:

- There has been insufficient interagency coordination; or
- Significant new information has been developed; or
- The project raises environmental issues of national importance.

Following the request, the Assistant Secretary of the Army for Civil Works will decide whether the DE's decision should be reviewed by higher authority and, if so, at what level of authority the review will occur.

The U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) have review responsibility over Section 404 permit applications under the requirements of the Fish and Wildlife Coordination Act. Under existing federal guidelines, FWS is responsible for certain issues of federal concern; these are: anadromous fish, migratory birds, and threatened and endangered species. NMFS is responsible for issues relating to commercial fisheries (freshwater, marine and anadromous). Unlike EPA, neither FWS nor NMFS have "veto authority" over the 404 permit. They do, however, have an MOA with the Department of the Army similar to that previously described for EPA. The same three criteria must be used to request "elevation" of permit review.

Effectiveness

Since 1974, the Seattle District has processed over 5,000 permits under the Section 10 and Section 404 regulatory programs. Of these, over 3,100 have been Section 10 permits (e.g., construction of a pier in navigable waters) and about 1,800 combined 10/404 permits (construction in navigable waters and fill in adjacent wetlands). About 390 have been exclusively Section 404 actions. The number of 404 and 10/404 permit applications processed annually has increased almost every year from 167 in 1974 to almost 350 in 1981. The district has no estimate of the wetland acreage these permits represent.

The district estimates that about 1-2% of the permits are denied each year and perhaps 5-10% are withdrawn. They also estimate that about 10% of the 404 projects are substantially modified during processing and review. These data suggest that while substantial numbers of projects are subject to Section 10 and/or Section 404 regulatory processing, relatively few are halted or significantly changed during the process. It should be noted that many permit applications are for small projects; major projects are more likely to be modified during the environmental review process. Often modifications will occur during the local or state environmental review process, prior to permit review by the Corps.

The district estimates it has handled almost 300 pre-application consultations a year since 1980. These consultations may range from phone calls of inquiry to formal discussions involving personnel from other agencies. Although they make no estimates of actual project reductions, personnel from the Regulatory Functions Branch feel these consultations often result in reducing project scope, particularly for small projects where the benefits to the applicant do not justify the costs of a public

interest review. From information gained, applicants often seek alternatives to or reductions in wetland fill or work in unique aquatic areas. In addition, the consultations serve to inform applicants of the procedures involved in the 404 review process.

Although the public review period is limited to 30 days, until recently, the Corps would not issue an approval or denial of a permit until comments were received from all federal and state agencies. Often this led to considerable delay in permit processing; delays greater than 120 days occurred with more than half the permit applications. Comments from the personnel of several agencies indicate that although the federal agencies were generally timely in their comments, the coordinated state response was often slow. The delay in state response is usually attributed to certification of consistency under the Coastal Zone Management Act and under Section 401 of the Clean Water Act. The processes established in these regulations may require six months or more. Since both certifications are a requirement for approval of a Section 404 permit, delays in the 404 process are almost inevitable.

Recent directives to the Regulatory Functions Branch have indicated a preference for quicker permit processing. The Corps has implemented a new approach to permit processing in an effort to achieve this. The permit review period is closed after 30 days and a decision is made within 60 days based on the available review comments. Agencies and the public must make their concerns known during the review period. In order to avoid issuing a permit over the objections of state or local agencies, approval of all applicable state and local permits, including Section 401 certification and CZM consistency, is a general condition of permit approval. The Corps is also working with state and local agencies to speed their response. These changes do not represent a change in authority, but rather a more strict application of existing authority. Although strict adherence to time limitations has been requested by the Office of the Chief of Engineers (OCE), it is not yet known whether the directive might conflict with regulation issued 22 July 1982 (33 CFR 325.2(d)3).

Personnel from the Seattle District have discussed the possibility that applicants might refrain from applying for a 404 or 10/404 permit until all state and local permits have been acquired. At that point, all concerns from those agencies would be presumed to have been expressed. As noted in the discussion below, there are several different permit programs at state and local levels which regulate development in wetland habitats. Although there is often considerable overlap between these programs and 404, each is slightly different in purpose and approach and the proponent must deal with each independently. While there is a potential for conflicting decisions, generally there is a consensus among agency personnel. Review processes for these permits can occur concurrently. In addition, environmental documentation required by state or local regulatory bodies has often been considered by the Corps in completing the required environmental analysis. Thus, overlapping jurisdictions and regulations are not generally viewed by Corps personnel as a reason either for conflict among agencies or for significant delay in permit processing; however, delay in agency responses has often led to delays in Corps decisions. By encouraging other agencies to issue or deny their permits first, the Corps could improve the processing time. Although this approach has been discussed, it has not been implemented, since

there are some questions concerning its legality. Such a policy might also create other problems or delays in the regulatory process; these are discussed in more detail in the Problems section.

Historically, the Seattle district has not often required mitigation or compensation from project proponents. Over the last 8 years, a total of less than 200 acres of wetlands have been created or restored as part of approved projects. Most of these were small parcels where less than 20 acres of wetlands were involved. Even in cases where some form of mitigation does occur, it often does not appear as a condition of the 404 permit. Instead, the mitigation plan is developed in an agreement between the proponent and one or more agencies which comment on the 404 permit application. Often these are state agencies with independent permit authority (see Washington State Wetland Regulatory Programs). Having established an acceptable mitigation agreement with the proponent, the agency has no objections to approval of the 404 permit.

Given the situation just described, it is difficult for Corps personnel to estimate exactly how much wetland restoration has occurred as a direct or indirect result of the 404 program. Furthermore, they often have no way of knowing if the agreed upon mitigation was successfully implemented. As a result of this situation and a desire for minimizing further wetland losses in a region which has lost so much already, interest has been expressed both within and outside the Corps for increasing mitigation activities.

After a permit has been issued, the project is inspected to confirm that completed construction complies with the approved design. In 1980, deviations from approved design were noted for 15% of the permits issued, while in 1981, only 8% of the projects exhibited any deviation. By 1982, only about 4% of the projects deviated. As with the increases in permit activity in 1980, this decrease in permit deviations has been attributed to an increased public awareness; both awareness of the program, and of the fact that it is being implemented more completely and consistently.

In summary, the Seattle District has received between 160 and 350 permits per year under the Section 404 program. Of these, only about 1-2% have been denied and about 10% significantly modified during the permit process. Another 5-10% have been canceled or withdrawn. Pre-application consultations are noted as important in reducing project scope and controversy and informing applicants of the regulatory process. Mitigation in the form of wetland creation or restoration has not been a major aspect of the permit program.

As noted, there is a 30 day public interest review once a permit application is accepted. During this period, agencies with jurisdiction or concern with regard to the proposed activity are supposed to submit comments on the application to the Corps. Until recently the Corps would not make a decision on a permit until it had received comments from appropriate federal and state agencies. Often delayed responses from these agencies led to substantial delays in permit decisions. Recent changes in processing and review procedure have resulted in a decrease in Corps processing delays. It is not yet known whether changes in procedures at federal and state agencies will also decrease delays in the review process.

Increased public awareness of the 404 program has probably resulted in part from increased permit activity and coordination with state and local agencies. Decreases in permit deviations and controversial proposals in the last few years suggest that project developers recognize that the Corps is implementing the program more vigorously and knowledgeably than it had previously.

Washington State Wetland Regulatory Programs

Shoreline Management Act

The Shoreline Management Act (SMA) established a program to plan and regulate development activities on the shores and in the waters of the State. SMA is a federally accepted program under the Coastal Zone Management Act (CZMA). As a result, any project receiving a 404 permit must demonstrate consistency with SMA. The state, through the Washington Department of Ecology (WDE), is responsible for administration of SMA; however, most review and permitting takes place at the local level. Each local jurisdiction developed a Shoreline Master Program (SMP) in accordance with policies and guidelines established by SMA. Note that each SMP is both a comprehensive use plan and use regulations which require that permitted uses "minimize any resultant damage to the ecology and environment of the shoreline area."

The jurisdiction of SMA includes:

- All tidal waters of the state
- All lakes larger than 20 acres
- All rivers with an average annual flow of greater than 20 cfs
- All lands extending 200 feet laterally from the ordinary high water mark of those waters
- All marshes, bogs, swamps, floodways, river deltas and floodplains associated with those waters

The definition of marshes, bogs, and swamps is not specifically stated in the SMA; rather, they are "to be designated as to location by the Department of Ecology" [RCW 90.58.030(2)(f)]. Although SMA does not have specific strictures against development in wetlands, local SMP's often limit activities in them (see Local Wetland Regulatory Programs).

The guidelines for preparing an SMP provide brief, general descriptions of the "natural geographic systems around which the Shoreline Management Program was designed;" marshes, bogs, and swamps are one type of natural system described. "These descriptions highlight features "which are susceptible to damage from human activity." The guidelines also provide a description of types of uses and criteria for regulation of those uses. Criteria for landfills are:

- Should be designed and located so that significant damage to ecological values will not occur

- Perimeters should be provided with vegetation or other mechanisms for erosion prevention

- Fill materials should not cause water quality problems
- Priority should be given to landfills for water dependent uses and public use
- In evaluating fill projects such factors as impediment to circulation, reduction of water quality, and destruction of habitat should be considered.

All landfill activities which occur within the jurisdictional area or SMA would require a substantial development permit under SMA.

In addition to policies and guidelines, SMA also identifies specific development activities which are exempt from regulation under the Act. These include:

- Normal maintenance or repair of existing developments
- Construction of normal protective bulkhead common to single-family residences
- Emergency construction to protect property from damage by the elements
- Construction of a barn or other agricultural structure
- Construction or modification of navigational aids
- Construction, by owner, of a single-family house for personal use

While actual regulation is done at the local level, WDE is responsible primarily for review and support of local programs. Review of local programs originally involved review and approval of draft SMP's to assure consistency with the objectives and regulations of SMA. Following approval of the SMP, WDE reviews permit decisions to assure continued compliance. WDE is also the responsible agency for appeal of local permit decisions. WDE also provides financial and technical support to local jurisdictions in developing and implementing their SMP's. Financial support is generally in the form of grants for special projects relating to management programs or natural resource inventories. Grant funds generally originate from the Office of Coastal Zone Management (OCZM).

Recently, WDE has conducted an evaluation of compliance under SMA at the request of OCZM. The study involved a field inspection of a random sampling permits which had been issued. The results were not systematically classified according to type of development activity or type of natural system involved. In general, they did not find much evidence of substantial permit violations or illegal fills. Similar to the Corps, WDE found that neighbors and inspectors from local jurisdictions often notified and reported violations. Also similar to the Corps, WDE found that enforcement, in the form of restoration was often difficult to achieve. "How do you make a 60-year old couple who just built their retirement home tear it down and remove an illegal fill?"

Hydraulics Project Approval (HPA)

The Washington State Fisheries Code requires that any project which will use, divert, obstruct or change the natural flow or bed of any lake, river or marine waters must have permit approval from the Washington Departments of Fisheries (WDF) and Game (WDG). Jurisdiction under this regulation extends up to ordinary high water in any lake or stream, thus including aquatic beds and some adjacent wetlands; many vegetated wetlands are not included, however. This regulation was enacted to protect fish and shellfish resources in the state. All proposed projects are reviewed for their potential impacts on non-game as well as commercial and sport fish; however, project impacts on wildlife, water quality, aesthetics, or other habitat functions are not evaluated except as they affect fish. Permit conditions on HPA are a significant environmental control, often specifying the time activities may occur, impact mitigation and specific design criteria.

Clean Water Act (CWA)

Under Section 401, WDE must issue a certification that materials to be discharged into a wetland will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of CWA. This certification is required for any discharge to be permitted under Section 404. As a part of Section 402 of CWA, the state is also responsible for regulating the discharge of woodwaste, garbage, and other solid waste material under the National Pollution Discharge Elimination System (NPDES). As a part of the NPDES program, however, WDE has noted some difficulties in effectively regulating solid waste discharge. First, the authority under the solid waste regulation is vague and oriented toward sanitary landfill activities. Furthermore, the authority is given to local public health officials who are often not concerned about downstream water quality impacts which do not directly affect people. Thus, WDE attempts to regulate woodwaste discharge under water pollution control authorities. Wetlands are not necessarily considered waters on the state, so only runoff from the disposal sites can be regulated. "I'm tired of trying to prove water quality difficulties from woodwaste leachates." WDE is presently studying this difficulty in hopes of developing an effective regulatory mechanism to control woodwaste discharge into wetland areas.

Other State Regulatory Programs

The state also exercises some jurisdiction over activities in wetlands through flood control management and the Forest Practices Act. The state flood control management program prohibits construction in the floodway and limits construction in the floodplain. Flood control management regulations are intended to limit increases in either upstream or downstream flood elevations due to construction of the floodplain, and to provide protection from flooding for structures within the floodplain. Fills are allowable if they achieve both purposes. Thus, protection of wetlands under these regulations is limited. Any construction activities in the floodplain require a permit from the state if the city or county does not have an acceptable flood control ordinance. Most cities and counties in western Washington do have an acceptable ordinance. The Forest Practices Act regulates logging activities on state and private lands. Protection of water quality, streams, and streamside habitat is a major component of the Act.

Local Wetland Regulatory Programs

Shoreline Master Program

Every coastal county and many cities have Shoreline Master Programs (SMP) established under SMA (see above). In general, SMP's identify marshes, swamps and bogs as valuable habitat areas and designate them as conservancy or natural environments. This zoning-like designation under the SMP severely limits the type of development activity which may be allowed in wetland areas. Passive recreation public parks and perhaps low density residential development are generally encouraged. Dredging and filling activities are generally discouraged.

Any development in a wetland area under SMP jurisdiction requires a substantial development permit issued by the city or county. Generally, issuance of a permit is preceded by an environmental review process which invites comments from all concerned agencies and the general public. The process may include an environmental impact statement (EIS) in which the existing conditions, potential impacts, and possible mitigating measures are discussed, as well as compliance with all applicable laws and plans. Often this document provides sufficient data not only for local jurisdictions to make decisions, but also for state and federal agencies (see Interactions and Coordination).

Sensitive Areas Ordinance

At present, only one local jurisdiction (King County) has a wetlands protection ordinance. The ordinance recognizes wetland functions which are considered to be of value to the county including wildlife habitat, open space, flood water storage and water quality enhancement. The ordinance mandates that development activities should not threaten these functions and that any permits issued by the county should contain provisions to protect those functions.

Following enactment of the ordinance, an inventory was conducted of all wetlands in the western half of the county greater than one acre in size. Wildlife habitat, water quality, aesthetics, and other values were assessed and each wetland was classified as unique and outstanding, significant or low concern. Policies and recommendations for allowable development activities, buffer zones and mitigation in each category are incorporated in the implementation guidelines developed for the ordinance. In addition, the location of each wetland was noted on 1:24,000 scale maps. The maps and inventory are consulted during review of any construction permit application requiring more than 500 cubic yards of fill. It should be noted that the absence of wetland in the inventory does not preclude its being considered under the ordinance, although it may be missed unless an on-site evaluation is conducted by county staff during the permit review process.

Unlike SMA or the State Environmental Policy Act (which gives local jurisdictions the authority to require an EIS), this ordinance was implemented solely at the desire of county government; it was not orchestrated by state government. Although King County is presently the only local jurisdiction with such an ordinance, one other western Washington county is presently considering similar regulations.

Interactions and Coordination

Public Interest Review

As part of the public interest review process, the Corps publishes a public notice of Section 404 permit applications. Notices are sent to all federal agencies with concerns (USFWS, EPA, NMFS) and all state and local agencies with potential jurisdiction or concern; numerous public environmental groups also receive notices. Comments from all but state agencies are sent directly to the Corps, including notice of any local permits which may be required. Responses from state agencies are submitted to WDE, where they are combined into a single state response. This response includes notice of any state permits or leases which may be required and whether they have been or will be issued.

Although the Corps can issue a permit over the objections of EPA, NMFS, or FWS, federal agency personnel generally prefer to achieve basic agreement on permit issuance and conditions in order to prevent conflicts. The Corps will not issue a permit if the project is determined to be inconsistent with the state Shorelines Management Act, or if the material to be discharged has not been certified by the state under Section 401 of the Clean Water Act. The Corps also will not issue a permit if a Hydraulics Project Approval is not forthcoming from WDF and WDG. The Corps can, however, deny a permit for a project all other agencies have approved. This is unlikely and has not occurred in the Seattle District very often.

Until recently, a group of federal and state agency personnel met monthly to discuss informally key permit applications coming before the Corps and state agencies. Although the group had no official authority to permit or deny proposed activities, they provided a forum for coordination between agencies with permit or review authority. They also invited project proponents to discuss the concerns of the various agencies with the goal of informally expressing agency concerns and suggesting project changes which might respond to those concerns. Although the Corps 404 permit authority was one of the major regulations which brought the group together, the Corps was not always represented, especially soon after the group was established. Apparently, the Seattle District did not feel it was an appropriate activity for regulatory personnel. Ultimately, the Corps was represented, but never took a lead in the actions of the group.

Many of the agencies responsible for permit review felt this informal "coordinated review" aided the review process; however, it received a mixed response elsewhere. Follow-up questionnaires from the group indicated most project proponents appreciated the informal review comments and suggestions; some, however, felt it infringed on objective due process. Some applicants contended they were facing "unified opposition to their projects and getting rejections of their applications from a de facto, illegal decision-making body, made up from nonmanagerial personnel." The concerns were brought before the state government and, at the Governor's request, the group was discouraged and state personnel disallowed from attending. Instead, the state intends to replace the informal process with a formal interagency group which can streamline project review in a legitimate manner.

Grays Harbor Estuary Management Plan

The Grays Harbor Estuary Planning Task Force was formed in 1975 in response to the numerous and sometimes conflicting plans and regulations which apply to the area. The Task Force consisted of representatives from all the agencies responsible for those plans and regulations. In 1976, funds were acquired from the Office of Coastal Zone Management (OCZM) for development of the Grays Harbor Estuary Management Plan. The goal of the Task Force was to develop a set of guidelines which would identify and resolve the conflicts and inconsistencies between the policies of the numerous agencies with jurisdiction in the area. Once endorsed by the participating agencies, the Plan would offer the "predictability" that activities permitted by the Plan would have general concurrence from all the agencies involved.

The planning process began with development of a comprehensive data base delineating the physical and biological resources, ownership, land use, comprehensive plan designations, areas of conflict and other data. Development of the actual Plan occurred during a series of workshops in which the Task Force determined planning areas, established specific management units, and developed policies to direct development activities in the estuary. The draft Plan underwent extensive review and a final Plan has recently been completed.

The Grays Harbor Regional Planning Commission is the lead agency for the Plan; the Commission has no authority to adopt or enforce the Plan, however. Rather, the Plan is recognized as a recommendation from the Task Force to the numerous agencies involved in the planning process and in development activities in the estuary. At present, an EIS on the Plan is being prepared by OCZM.

Each of the agencies involved has also been asked to prepare a memorandum of understanding (MOU) which explains how the agency perceives the Plan, and how it will be used. To date, none of the MOU's have been completed and probably will not be until the EIS is finalized. Unofficially, several agencies have indicated the Plan will probably not be considered binding; it will, however, be given serious consideration in evaluation of local concerns and the public interest. FWS notes that they support the Plan; they have accepted some major environmental losses in exchange for long-term protection of other portions of the estuary. They also observe that the plan does not make decisions; it will serve as a guideline and should streamline permit review. The Corps also supports the Plan in general. They have been asked to give serious consideration to issuing general permits for some activities in the area; in particular, the disposal of dredge or fill material in unvegetated and vegetated intertidal areas designated in the plan for industrial development. To date, no decision has been made on these general permits.

A major issue of concern in the Plan is the predesignation of dredge material disposal sites within the estuary. The Regional Planning Commission and the Port of Grays Harbor have expressed a strong desire for predesignation by EPA; to date, EPA has not made a decision on this issue. Since some of the areas are vegetated and unvegetated wetlands with significant environmental values, EPA has expressed some concern about whether such

a pre-designation is legal. Furthermore, EPA is apparently reconsidering whether their participation in the planning effort was legal. The present administration has expressed a concern about federal involvement in local land use planning. Until these questions are decided, it is unlikely there will be any finalization of the Plan. The Port has indicated it is particularly anxious for EPA to make this last major commitment to the Plan.

State and local concerns about federal agency involvement in the Plan has also been expressed in another manner. The Plan is viewed as an attempt to create a regional plan for shoreline management which will provide consistency and predictability for both development and conservation interests. Through the planning process, least damaging alternatives and compromise solutions were investigated and pursued. If the federal agencies cannot commit to the final components of the Plan, then case-by-case permit evaluation will replace long-term planning. Not only will predictability and shortened permit processes be precluded, but also, other local jurisdictions will be discouraged from pursuing comprehensive shoreline planning. This is perceived to thwart the goals of Coastal Zone Management.

In spite of the concerns described above, the Plan is considered by many to have been a successful exercise. Most of the jurisdictions involved felt it was a good idea and have committed time and effort for almost six years. The Port has often been active in maintaining momentum when other agencies lost enthusiasm or were mired in the process. Furthermore, many areas of "predictability" have been identified. Development interests can learn which are controversial locations and which are acceptable. At least some regulatory agency personnel are already using the Plan to assist them in making decisions, even if they have not firmly acknowledged its authority.

Wetland Reviews

As noted in 33 CFR 320.4(b)(3), "the District Engineer may undertake reviews of particular wetland areas...to assess the cumulative effect of activities in such areas." Wetland reviews have been conducted for about six estuaries on the West Coast. In 1977-78 the Seattle District conducted a review of the Snohomish estuary. The goal was to provide a comprehensive inventory of wetland habitats, a discussion of existing regulatory controls and recommendations for wetland protection. As part of the project, a complete inventory and mapping of land use and land cover was prepared. In addition, fish and wildlife habitats, and physical, cultural, and aesthetic characteristics were mapped and evaluated.

From the data gathered, wetland areas within the estuary were designated as areas of importance, areas of environmental concern, and other areas. Areas of importance are those areas with unique resources, or those which serve critical functions. It is recommended that they be maintained in their present state and that any 404 permit be approved "only if the activity is clearly in the public interest." Areas of environmental concern are sensitive to development or change, but may have uses which are "consistent with maintenance of their habitat values." It is recommended that "only uses in the public interest and compatible with the habitat values should be approved." Other areas are those in which "new development would

have minimal impacts on wetlands and other valuable habitat types." No recommendations were presented for enhancement of wetland values.

Since its completion, the Snohomish Estuary Wetland Study (Shapiro/Driscoll, 1978) has been used regularly by the Seattle District. Within the Regulatory Functions Branch, use of the document has emphasized the identification of wetlands as a means of determining Corps jurisdiction under Section 404. As a result, the need for time-consuming site visits has been reduced. It is also used in pre-application conferences to inform applicants of issues of concern and suggest methods for minimizing impacts associated with their proposal. In the Environmental Resources Section, the analysis of wetlands values has been used in preparing environmental assessments (EA) of proposed 404 permit activities. The detailed data base presented in the review saved both time and effort in preparing environmental documentation. Furthermore, in the winter it provides data which would not be available even on a site visit. On occasion, the review has even been used as a data source for EA's on sites in other estuaries with similar habitats.

It should be noted that the Snohomish County Planning Department also uses the study to evaluate substantial development permits under their Shoreline Master Program. The small county staff lacks the technical expertise to evaluate all the functional characteristics and potential impacts associated with a particular site; the review contributes to the accuracy and consistency of their decisions. In addition, the important wetlands which were identified in the study have been incorporated as areas of special concern in the County Comprehensive Plan.

Problems

Deficiencies

Responses to questionnaires indicated that many agencies considered the major deficiencies to be those areas or activities which the program does not regulate. Dredging and draining are the most obvious unregulated activities, particularly on the shores of lakes not considered navigable waters. These activities are intended to improve the recreational value of lakefront lots by providing boat access or yard areas. A greater concern was expressed, however, for practices associated with the forest products industry, in particular, clearing and the discharge of woodwaste material. The State Forest Practices Act requires the use of "best management practices" in the construction of roads and working areas and the preservation of riparian habitat to maintain stream water quality. It does not prevent clearcut activities in isolated swamps, nor does it preclude impacts to isolated marshes and bogs. Disposal of woodwaste in estuarine areas, including vegetated wetlands, is a common practice. Regulation of woodwaste fill by the State under the NPDES program is considered by some to be either inadequate or nonexistent. In addition, the "primary purpose" criterion used by the Corps to define woodwaste disposal as a Section 402 activity outside of 404 jurisdiction was described as unrealistic. Many of the log storage yards and industrial facilities in western Washington are sited on woodwaste-filled wetlands. An "ultimate purpose" rather than "primary

purpose" criterion has been suggested to evaluate whether the disposal of waste is to be considered a Section 404 activity.

The discharge of garbage was also noted as a major loophole which has had significant impact on wetlands of the region. As noted previously, the discharge of urban waste is defined by the Corps as a Section 402 activity and, therefore, is regulated by the State under the NPDES program. Also as noted previously, the State regulatory program is not considered to be very effective. A concern was also registered that the Corps had regarded the use of automobile bodies as riprap along eroding shorelines as solid waste disposal and, therefore, not a Section 404 activity.

The upstream limits of Corps jurisdiction have been identified by some as a deficiency in the regulatory program. It is felt that many important wetlands are isolated or located in the headwaters. For the major rivers of western Washington, this is probably not a problem. The point of 5 cfs flow is high in the Cascades, often in national forests or parks and accessible only by foot. For lowland creeks, however, it is perceived as a problem. Often large lakes which control local groundwater conditions or provide important wildlife habitat are located in these headwater areas. With the removal of the minimum lake size from the headwaters definition in the new regulations (33 CFR 323.2), these waters are now included under a nationwide permit (33 CFR 330.4). Even though the district engineer has discretionary authority to regulate in these areas, it was felt that the regulations would discourage him from doing so. The potential impacts of fill activities in these areas was felt to be an issue of national concern. One local agency staffer felt the Corps did not adequately enforce its regulations outside of navigable waters anyway, and thus, this was not a real problem. The Corps responds that while this was once a problem, increased awareness of 404 jurisdiction by the public and local agencies is reducing its significance.

Inadequate or uneven enforcement was also noted as an area of concern. Compliance inspectors were noted to "go after a dock five feet too long with the same zeal as an illegal 50-acre fill." This was acknowledged as a problem by some Corps personnel. The problem was attributed to the process for handling compliance deviations. The mechanism does not distinguish between big violations and little violations, all are handled the same. It was also noted that there were some problems in dealing with illegal fills. When a violation is identified, it is reported to the U.S. Attorney. A fine is levied and the violator is told to get an after-the-fact permit. If regulatory functions finds that a permit is not justified, there is no further enforcement action. The U.S. Attorney is apparently not concerned and Corps council is not sure that they can legally pursue the matter without the U.S. Attorney.

Several local agencies expressed interest in better communication with the Corps. This included a desire for information concerning the extent of Corps jurisdiction and the requirements of the program. Concern was also expressed about insufficient pre-application coordination between the Corps and local agencies.

Coordination

As discussed earlier, no formal coordinated review process exists between federal, state and local agencies. For a while, a group of agency personnel served that role on an informal basis at the federal and state level (see Public Interest Review above). Presently that group does not exist, although a new review group is being formed at the state level. This group will consist of department heads from Game, Fisheries, Ecology, and Natural Resources. Federal agencies may also be involved. The group will provide a forum for applicants to present a description of proposed projects requiring a Section 404 permit. The group will then prepare the coordinated state response to 404 permit applications. The potential for involvement by the Corps is not known, but considered unlikely.

Generally, coordination between the various levels of government has been noted as inadequate. Local governments almost always learn first about proposed projects, but they do not necessarily know that the Corps should be informed of the proposed project. In contrast, the Corps public notice is sent to all federal, state and local agencies which may have a concern with regards to a project. This notice is sometimes the first information that some agencies have concerning a project. Several agencies at both federal and state levels have expressed an interest in learning of potential permit applications as quickly as possible. They feel that they could provide suggestions at the pre-application consultation level which might minimize conflict and controversy later in the process. This type of coordination happens occasionally now and is perceived to be valuable by the agencies involved.

As discussed previously, the Corps is sometimes caught between a need to process permits quickly and a requirement to consider comments from other agencies. If agencies with concerns do not respond in a timely fashion to the Corps public notice, it is difficult for the Corps to respond to their comments. Historically, the Corps has waited until all comments were received before making a decision; this often resulted in extensive delays. Under recently enacted processing procedures, the Corps will no longer wait for all agencies to submit their comments. Rather, they will make a decision based on available information at the end of the review period. If the decision is for approval, one condition will be receipt of appropriate permits from other agencies.

These new procedures will have several effects on agency coordination and project review. First, they will allow the Corps to process permits more quickly, minimizing delays which can be both aggravating and expensive to project proponents. Second, they will encourage agencies to express their concerns in a timely fashion. This is particularly true for agencies with no permit authority to impose on the project, such as FWS and NMFS. If they want the Corps to deny a permit, consider mitigation, require an EIS or any other action, they will need to present their reasons and to do so within the required review period (see description of the Section 404 program for a further discussion of the Public Review Process).

Overlap, Conflict, and Gap

With different regulatory programs at different government levels, each representing different goals and policies and each administered in a different manner, the potential for overlap and conflict is great. Overlap is a product of similarity in the programs. Differences in mandate can lead to conflict, while differences in jurisdiction can create gaps in regulation.

Overlap. In tidal wetlands, or most large inland wetlands, all federal, state, and local wetlands regulations apply (see Deficiencies section for a discussion of 404 regulation above the headwaters). Any proposals for these areas will probably be controversial; public involvement and concern will be great. From the applicant's view there is a never-ending maze of applications and regulatory review. All appear to be duplicative; how many acres of wetlands will be lost, how many birds and fish, what will be the impacts on water quality and flooding. Generally, for large-scale projects this process is acceptable, albeit annoying, to most applicants in light of the size and potential return of the project. Coping with the mass of environmental and other regulations is a necessary but unpleasant cost of doing business. Occasionally, however, the level of review and apparent bureaucratic paper shuffling is the same for a one-acre fill on a small lake as it is for major projects in navigable waters. In this case, the confusion and consternation as a result of overlapping and apparently repetitive regulation can lead to frustration and anger, particularly if the proponent is an owner-builder or a small-scale entrepeneur.

Conflict. Regulatory conflict usually occurs where agencies with a very narrow mandate are involved. Protection of anadromous fisheries or water quality and flood control are examples of narrow mandates. In a specific situation, these agencies might find that their very different goals could lead to conflicting desires for management of an area. For instance, if a stream enters a small densely vegetated pond, there may be no potential for fish migration upstream. The pond, however, serves important water quality and flood control functions, slowing and storing flows from upstream and filtering suspended sediments. The potential for management disagreements in such a system is obvious.

Another example of this conflict comes from a project presently being considered. A small stream enters a large wetland area where its flow is widely distributed into a sheetflow situation. Historically, this stream supported a population of anadromous fish and the aquatic habitat upstream of the wetland could do so now. About 20 years ago a flood resulted in clogging the creek mouth with sediment, blocking fish migration, and creating the sheetflow. The sheetflow in turn converted much of the low area into wetland and substantially improved the wildlife habitat. A proposed project on the site would fill a small portion of the wetlands, but maintain the sheetflow and, therefore, the remaining wetland habitat. Washington Department of Fisheries has suggested as a mitigating measure that a channel be dredged through the sheetflow area to permit reestablishment of the anadromous fishery. This would probably result in a significant change in the adjacent wetlands and wildlife habitat through a change in the hydraulic regime. Again, the management conflict is obvious. Although it has not been resolved, these conflicts are generally resolved by negotiation and

compromise between the agencies and project proponents before the permits are issued.

The Section 404 program serves an important role in these types of conflict. The criteria for public interest review are holistic in that they attempt to evaluate the costs and benefits from a variety of perspectives. Input from fisheries, water quality, and flood control agencies would be requested and considered in an attempt to find a balanced approach to regulating the resource.

Another regulatory conflict which has been noted was described in the discussion of the Grays Harbor Management Plan. If federal agencies are not bound by local planning efforts, then coastal management will be conducted on a case-by-case basis. In such a situation, Section 404 and other federal regulations could conflict with state-supported (and CZM-supported) planning efforts. By the same token, federal regulations could also moderate the impacts of local planning efforts which had been strongly affected by local or regional political influences.

Gaps. Gaps in the regulations on protection of wetland areas generally occur near the limits of jurisdiction. The 5 cfs threshold of the 404 program may not be a major issue in western Washington, but in more arid eastern Washington it could result in the unregulated loss of critical habitat areas. The limitation of 404 to filling activities means that dredging of wetlands to drain them is immune to federal regulation. If, in addition, these wetlands are on a lake of less than 20 acres in size, they are also immune to regulation under the state SMA. Although activities in these areas might still require Hydraulics Project Approval from the Departments of Fisheries and Game, it is quite possible that the Departments might never learn the project existed; the 404 notice of public review is often their major means for learning of a project.

POTENTIAL CHANGES AND IMPLICATIONS

A variety of changes have been suggested for the Section 404 program. Some are intended to narrow its jurisdiction and some to improve coordination. In addition, there have been several suggestions for transferring all or parts of the 404 authority to state or local governments or to some other federal agency. In this section, each of the suggested changes is described, and the advantages and disadvantages, as perceived by agency personnel, are discussed.

Delegation to the State

The Washington Department of Ecology (WDE) is presently evaluating the feasibility of assuming portions of the 404 program under the authority of Section 404(g) of the Clean Water Act. Under that authority, the Corps would retain jurisdiction over activities in "traditionally navigable" (Phase I) waters. The purpose of the WDE study is to determine the capability of existing management programs to accommodate the responsibility associated with assumption of the 404 program in Phase II and Phase III waters. Due to severe budget constraints and the prevailing mood toward less regulation, the state has predicated its analysis on the assumption that no new regulatory programs would be established in order to implement the 404 program. It should be noted that the state has suggested that jurisdiction in Phase I waters should also be transferable.

The WDE study is in four parts, of which two have been completed. The first task was an analysis of state and local regulatory programs and how they compare to federal regulations (Sakrison, 1982a). The second task analyzed state and local management programs and agency coordination in comparison with the existing federal program (Sakrison, 1982b). Task III will evaluate the technical capability of state programs to handle the 404 responsibilities, and Task IV will address budget and staffing issues. Task II was just completed (26 July 1982) and Task III is just beginning.

Task I identifies first the federal requirements, both substantive and procedural, for a state 404 program, as established in the Consolidated Permit Regulations (40 CFR 122, 123, 124). Second, the capability and deficiencies of state regulatory authorities to fulfill those requirements are described. The permit requirements and notification process are identified as major areas to be considered in Task I. Environmental guidelines will be addressed in later tasks. Major deficiencies identified in the capability of existing state programs fulfilling 404 program requirements include:

- Record-keeping beyond application and approval stage
- Lack of monitoring requirements in all but the NPDES program
- Jurisdictional gap between 20 cfs (SMA minimum flow) and 5 cfs (404 minimum flow)
- Provision for EPA review and approval

The conclusion of the Task I report is that statutory authority exists or is authorized to implement a state 404 program; however, it is not apparent whether there is sufficient compliance with federal requirements to allow state assumption.

Task II describes the existing state environmental management programs and how well they fulfill the requirements of environmental review and coordination established by the 404 program. In addition, an institutional framework is proposed for implementation of the 404 program by the state. The potential deficiencies of this framework are also discussed. The conclusion of Task II notes two major questions:

- Do existing state permits sufficiently address the environmental criteria established in the federal regulations?
- Will state agencies be able to cope with any additional burden associated with assumption of the 404 program?

Answers to these questions will be sought in Tasks III and IV.

The concept of state assumption of the 404 program has received mixed reviews from federal, state, and local agencies. In general, federal agency personnel indicate that the position of their agencies would be to support state assumption. Privately, however, some express concern about the State's technical or funding capabilities to handle the program. Others question the state's ability to withstand political pressure. Furthermore, certain federal mandates, such as endangered species or international negotiation of fisheries issues, could not be assumed by the states. From all the agencies there was the statement that wetland issues are a national concern and deserve national attention.

At the state level, responses also differ. WDE has not yet completed its feasibility analysis and is not yet ready to take a stand on state assumption. Personnel of the Washington Department of Fisheries observed that state assumption of the 404 program was a policy issue to be considered at the executive level; therefore, they offered no comment. Personnel from the Washington Department of Game (WDG) expressed a concern that they would be overruled more often; without the regulatory strength of the Fish and Wildlife Coordinating Act, game issues would not always be resolved. WDG staff also noted that with state assumption valuable federal expertise from the Corps and FWS would be lost. Washington Department of Natural Resources (DNR) noted that state and local agencies would probably prefer to control activities in their own areas; the process would not necessarily be more efficient, however. DNR also noted a potential for conflicts between state and federal interpretation of criteria and the fact that local government is more subject to political pressure.

Personnel from several local governments felt that state assumption would have no real advantages. Other local government staff stated that they lacked sufficient background to comment. Concerns about sufficient funding and expertise at the state level, especially in WDE, were frequently identified. Local agencies also declared they were strongly not interested in assuming the 404 responsibility. They felt a lack of necessary funds and

expertise to deal with the issues. In addition, they felt the federal mandate for wetlands protection was important and supported local wetlands protection efforts. "State and local governments are too frequently swayed by short-term interests." Where local interest in assuming the 404 responsibility was expressed, stringent criteria and a systematic process were desired.

In contrast to the above, private development interests expressed a desire for wetlands regulation to be coordinated at the local level. They felt they understood the regulatory programs of local government and had established the rapport necessary to work with local staff. To the private sector, many of the state and federal regulatory programs seemed arbitrary and inconsistent, while the responsible officials were unidentified bureaucrats.

In summary, there appears to be little enthusiasm for state assumption of the 404 program. Federal agencies would probably embrace it as the official posture, but the staff are privately concerned about the state's ability to implement the program. At both the state and local level there is a concern about adequate funding and expertise to handle the program at the state level. Furthermore, the nationwide interest in wetlands and concern for preserving them is very clearly and unequivocably stated at present. No federal agency is perceived to hold as much respect or political clout as the Corps; if they protect wetlands, it must be important.

Delegation of 404 to Another Federal Agency

The idea of transferring 404 authority to some other federal agency was brought up a few times during this study; generally, EPA or FWS were suggested. With their strong environmental mandates, it was suggested they might be better stewards of the resources. FWS indicated they were not interested in assuming the Corps' responsibilities.

Although most agencies had some difficulties and conflicts with the Corps and its implementation of the 404 program, the concensus was "the Corps has not done that poorly," either regionally or nationwide in protecting wetlands. Furthermore, most agencies felt the Corps gave the program a respectability and importance, not to mention funding and expertise, that no other agency could provide. As one source put it: "Better to keep the 404 program in the fatpads of the Corps than to move it to the undernourished body of Fish and Wildlife."

Reduction of Jurisdiction

Several proposals have been made to reduce the jurisdiction of the Corps under Section 404 to Phase I or "traditionally navigable" waters. Objections to these proposals were almost universal from the regulatory community. Not surprisingly, the reverse was true from the development community.

Federal agency personnel noted that the Corps involvement in wetlands regulation gives strength and validity to the concept. It also offers incentive and assurance to other agencies, at all levels of government, that regulation of development activities in wetlands is good and proper. Both arguments indicate the firm dedication that agencies have to federal regulation of wetlands. Furthermore, "navigability and the integrity of the nation's waters have nothing in common."

At the state level, the proposals were described as disastrous from a resource protection point of view. It was also noted that the 404 review process was a major source of information for state agencies. Often the public notice is the first indication to staff agencies that development activities are being proposed for state-owned tidelands or state-regulated waters. Again, responses from agency personnel indicate a strong desire for the Corps to maintain an active involvement in wetlands regulation and a continuation of the existing jurisdiction.

Responses at the local level were a little more diverse. One local staff member felt the "Corps is only active in navigable waters anyway, so no great loss." Another felt a reduction in jurisdiction should only occur if a state or local asumption of authority occurred concurrently; even then, loss of federal concern in non-navigable waters would diminish the effectiveness of local programs. Furthermore, inadequate local funding and expertise would make effective assumption impossible. Even at the local level, wetlands protection is recognized as being of national, regional, and long-term interest, and as deserving of continued federal involvement in policy and regulation. The proposals are "just another in a series of measures to place short-term economics above environmental policy due to special interest pressure."

Coordination

Efficiency and coordination in permit review and processing was identified by every respondent as an issue of major importance. Some new procedures have been implemented by the Corps which will result in quicker processing of permit requests. At the same time, these procedures will force reviewing agenies to respond more quickly if they wish their concerns to be incorporated into the Corps decision or any conditions placed on a permit. For further discussion of 404 permit processing procedures by the Corps, see the Existing Controls section.

Some interest has been expressed by federal agencies in "joint processing" as it is implemented by some districts. State and local agencies, and some private developers, have expressed an interest in a "one-stop" permit, in order to simplify and shorten the permit procedure. The Seattle District has not expressed any strong interest as yet.

RECOMMENDATIONS

As a result of these investigations, several possibilities for improvement of the Section 404 program have been identified. Some came from respondents to the questionnaires; others evolved from discussions among the authors. No priority is implied by their position in the following list.

- Improve local agency awareness of the purpose and authority of the 404 program through presentations, publications, and other public awareness activities.
- Establish a coordinated review, such as "joint processing," to minimize delays in review period.
- Allow extension of review period to agencies if formally requested and if justification is presented.
- Consider other coordinated management plans similar to the Grays Harbor Estuary Management Plan to create predictability in the regulatory process.
- Encourage data and technology exchange between agencies to enhance understanding of wetlands values and concerns.
- Remove exemptions of 404 authority from woodwaste and garbage fills--major causes of water pollution and wetland loss in western Washington.
- Encourage participation of federal agencies in local coastal planning efforts to increase predictability of permit processes.
- Reduce emphasis on speed of permit processing in exchange for quality of projects permitted.
- Improve quality and consistency of enforcement, including participation by U.S. Attorney's office; moderate enforcement activities in response to degree and impacts of violations.
- Expand use of mitigation actions, including concept of a mitigation "land bank" on local or regional basis.

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APPENDIX A

QUESTIONNAIRE CONCERNING
THE SECTION 404 PROGRAM
(CORPS OF ENGINEERS)

(If detailed quantitative responses are not possible, estimates will be helpful).

Implementation

1) How many 404 applications (and/or applicants) have you seen each year since the establishment of the program? How many were public agencies? Large private developers? Small private developers (less than 10 acres)? How many were projects in Phase 1 waters? Phase 2; Phase 3? How many fell under nationwide permits?

2) How many pre-application consultations does your district handle? (That is, instances where prospective applicants for 404 permits seek advice from Corps personnel in person or over the telephone). What percentage of permit applicants seek pre-application consultation? How many were public agencies? Large private developers? Small private developers? Have these numbers or percentages changed since 1972 (the commencement of 404)? Why?

3) What are the results of pre-application consultations? For example, have there been reductions in the proposed amounts of dredge and fill material generated and acreage of wetlands used as a result of a pre-application conference? If so, can you estimate amounts and acreage? How important have consultations been in influencing prospective permit applicants to use better management practices, or to change planned activities so that they would fall under general permit categories? How important have consultations been in minimizing total impact? Have consultations shortened the permit process? What changes have occurred in the implementation and effect of consultations since 1972?

4) Are there any differences in the permit processing procedures for public agencies and private developers? One of the criteria for granting a permit is that a proposed action be in the public interest. Is there any presumption in permit review that actions proposed by public agencies are therefore in the public interest?

5) What proportion of permitted projects in your district have benefited from "technology transfer" under the 404 program--that is, where applicants have received advice from federal personnel that has reduced project costs without loss of project benefits? What has been the average percentage of such savings in terms of project development costs? What effect has the consultation had on permit review and progressing time?

6) Has any type of "coordinated review" process been used? How has it influenced the permit review process; project costs; project benefits? How has it been received by applicants?

7) What number and percentage of permits involving a 404 review were substantially modified? Denied? Withdrawn? Have these numbers or percentages changed since 1972? Why?

8) What criteria are used to implement a general permit? Are there any opportunities to increase the use of the general permit? Are there any problems or objections to use of the general permit? What type of monitoring and enforcement are used with the general permit?

9) Has the "wetland review process" aided permit processing? Should it be used in other areas of the district? How can it be improved?

10) Compare total acreage of wetland alteration permitted to that orginally requested. What is the average per project comparison? Describe some extreme examples? Have these comparisons changed since 1972?

11) How many environmental reviews, EIS's, etc., do district personnel conduct under the 404 program? How many are conducted by the applicant or consultants? State or local agencies? How many are conducted under other regulatory programs? Has this changed since 1972? How much?

12) How often does the district require mitigation as a permit condition? Is mitigation required on-site or is off-site compensation allowed? Has this changed during the history of the program? Have any wetlands been created or restored as a result of the 404 program? If so, how many acres?

13) Referring to question #2 of Section B of the Regulatory Impact Questionnaire (sent out at the end of 1981 by the Regulatory Functions Branch), what percentage of delays in issuing permits (i.e., over 120 days) are related to Section 404 as opposed to Sections 10 or 103?

14) State and local programs and the 404 program often reinforce each other. Is it possible to separate the effects of the 404 program as described in questions #3-8, from the effects of state programs? What about local programs?

15) Can delays from state or local programs be distinguished from delays by 404/10 programs?

16) Do state and local agencies ever allow the Corps to make the "tough" decisions, thus avoiding local difficulties? Does this happen often?

Monitoring and Enforcement

1) a) What percentage of permits are field-checked to monitor compliance with permit conditions after a permit is granted: (i) by Corps personnel, (ii) by personnel from other federal agencies?

b) Apart from field-checks of permitted projects, how are wetlands in your district monitored to check for violations of the 404 program (i.e., reconnaissance flights)? How often are such checks made?

c) How many violations (i) of permit conditions (ii) of discharging material without a permit are detected in your district each year?

d) Of such violations: How many are granted after the fact permits? How many are prosecuted? What have the results of prosecutions been? How many violators agree to restore damaged wetlands without prosecution?

e) What proportion of violations have been reported by private citizens, private organizations, local government, state government?

2) What are major loopholes in the program -- that is, practices not covered by the program that have major effects upon wetlands in your district?

Program Changes

1) Several Congressional bills have contained provisions that would limit Corps 404 permitting authority to navigable waters, usually defined as "all waters which are used, or are susceptible to use in their natural condition or by reasonable improvement, as a means to transport interstate or foreign commerce shoreward to their ordinary high water mark, including all waters which are subject to the ebb and flow of the tide shoreward to their mean high water mark". Alternative limitations of Corps authority suggested by various sources include restriction to Phase I waters (i.e., wetlands adjacent to navigable waters would be included).

Do you agree with any of the above proposals? What effect, if any, would they have on state or local wetland programs, and on the state's wetlands? If Corps authority were to be limited to any of the extents summarized above, how would state or local governments react?

2) Do you have any suggestions for improvement of the 404 program?

3) Do you think Washington state is interested in assuming all or part of the 404 authority? What about any local governments? Rather than assuming 404, would the district prefer an arrangement in which the Corps via a general permit/MOU de facto delegates permitting authority to the state, with minimal federal review?

4) Do you think the state or local governments should assume all or part of 404 authority? Why or why not?

Other

Are any of the items in the following list of particular importance in this district? Why? Are any of the items identifiable non-issues? Why?

ISSUES THAT MAY BE OF IMPORTANCE

1. Monitoring and enforcement
2. Record-keeping
3. Prescreening of applications/preapplication conferences
4. General permits
5. Use of regional vs. nationwide permits
6. Definition, identification and mapping of wetlands
7. Public awareness of the program
8. Variations in Corps district procedures
9. Exempted activities
10. Wetland areas not regulated
11. Activities specifically not regulated (e.g., drainage by depositing fill in non-wetland areas or through pumping)
12. Mitigation measures and use of conditions on permits
13. Restoration/creation of wetlands
14. Use of long-range planning approach as opposed to case-by-case permit review
15. Consideration of cumulative impacts
16. Consideration of wetlands of special significance
17. Consideration of degraded wetlands
18. Coordination among Federal and State agencies
19. Use of joint-processing, joint forms
20. Reporting requirements for general, nationwide permits
21. Elevation of permit decisions
22. Time limits for permit review by State, Federal agencies
23. Time limits for permit decisions
24. Use of water dependency standard
25. Use of practical alternative test
26. Balancing development with wetland protection
27. Funding

OTHER ISSUES THAT MAY BE OF IMPORTANCE

1. Use of E.O. 11990
2. Accomplishments of wetland acquisition programs
3. Tax laws

QUESTIONNAIRE CONCERNING
THE SECTION 404 PROGRAM
(FEDERAL AGENCIES)
(OTHER THAN THE CORPS OF ENGINEERS)

Implementation

1) How many 404 permit applications does your agency comment on? How responsive is the Corps District to your concerns? How has this changed since 1972?

2) What are the major concerns of your agency with regard to Section 404 and wetlands regulation in the Puget Sound Region? Grays Harbor area?

3) How many pre-application consultations does your agency participate in? How many are public agencies? Large private developers? Small private developers (less than 10 acres)?

4) What are the results of pre-application consultations? For example, have there been reductions in the proposed amounts of dredge and fill material generated and acreage of wetlands used as a result of a pre-application conference? If so, can you estimate amounts and acreage? How important have consultations been in influencing prospective permit applicants to use better management practices, or to change planned activities so that they would fall under general permit categories? How important have consultations been in minimizing total impact? Have consultations shortened the permit process? What changes have occurred in the implementation and effect of consultations since 1972?

5) Has any type of "coordinated review" process been used? How has it influenced the permit review process; project costs; project benefits?

6) Are there any differences in the review process for public agencies and private developers? One of the criteria for granting a permit is that a proposed action be in the public interest. Is there any presumption in permit review that actions proposed by public agencies are therefore in the public interest? Is there any presumption that actions proposed by private developers are less likely to be in the public interest?

7) What is your agency attitude concerning general permits? Has implementation of the general permit simplified or eased the regulatory process? Has it resulted in any loss of important natural resources?

8) What are major loopholes in the 404 program--that is, practices or resources not covered by the program that have major effects upon wetlands?

Program Changes

1) Several Congressional bills have contained provisions that would limit Corps 404 permitting authority to navigable waters, usually defined as "all waters which are used, or are susceptible to use in their natural

condition or by reasonable improvement, as a means to transport interstate or foreign commerce shoreward to their ordinary high water mark, including all waters which are subject to the ebb and flow of the tide shoreward to their mean high water mark". Alternative limitations of Corps authority suggested by various sources include restriction to Phase I waters (i.e., wetlands adjacent to navigable waters would be included).

Do you agree with any of the above proposals? What effect, if any, would they have on state or local wetland programs, and on the state's wetlands? If Corps authority were to be limited to any of the extents summarized above, how would your agency, or state, or local governments react?

2) Do you have any suggestions for improvement of the 404 program?

3) Do you think Washington State is interested in assuming all or part of the 404 authority? What about any local governments? Rather than assuming 404, would your agency prefer an arrangement in which the Corps via a general permit/MOU de facto delegates permitting authority to the state, with minimal Federal review?

4) What would be the advantages or disadvantages of the State or local government assuming 404 permit authority?

Other

Are any of the items in the following list of particular importance in this district? Why? Are any of the items identifiable non-issues? Why?

ISSUES THAT MAY BE OF IMPORTANCE

1. Monitoring and enforcement
2. Record-keeping
3. Prescreening of applications/preapplication conferences
4. General permits
5. Use of regional vs. nationwide permits
6. Definition, identification and mapping of wetlands
7. Public awareness of the program
8. Variations in Corps district procedures
9. Exempted activities
10. Wetland areas not regulated
11. Activities specifically not regulated (e.g., drainage by depositing fill in non-wetland areas or through pumping)
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19. Use of joint-processing, joint forms
20. Reporting requirements for general, nationwide permits
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22. Time limits for permit review by State, Federal agencies
23. Time limits for permit decisions
24. Use of water dependency standard
25. Use of practical alternative test
26. Balancing development with wetland protection
27. Funding

OTHER ISSUES THAT MAY BE OF IMPORTANCE

1. Use of E.O. 11990
2. Accomplishments of wetland acquisition programs
3. Tax laws

QUESTIONNAIRE CONCERNING THE SECTION 404 PROGRAM
AND OTHER WETLANDS REGULATORY PROGRAMS
(STATE AGENCIES)

Implementation

1) Has there been concern about wetlands in your agency? Does your agency have an expressed policy for wetlands protection? What benefits does your jurisdiction gain from wetland development or protection?

2) What are the primary means used by Washington State to control the use of wetlands? (If possible, rank their importance.)

   . State wetland permitting programs. (Is the program part of a coastal zone management program?)

   . Other State programs not directed primarily at wetlands, but which protect wetlands in the course of their implementation (e.g., flood-plain management, flood control, critical area programs). List applicable programs.

   . State influence on federal permitting programs [e.g., Section 401 of the Clean Water Act (for DOE only, this is a certification that material to be discharged is acceptable under state water quality standards), Section 404(t) of the Clean Water Act, Section 307 of the Coastal Zone Management Act (federal consistency with CZM or SMA)]. List applicable programs.

   . State standard setting for local regulation.

   . State has no programs that control the use of wetlands.

   . Local programs

   . Other

3) Have there been any changes in concerns or attitudes about wetland regulations in the last 10-15 years? How many of those changes can be attributed to Section 404 Regulations? Other federal or state regulations?

4) What proportion of wetlands in Washington state is regulated? in the Puget Sound region? Which programs regulate which type of wetlands (coastal, riverine, etc.)?

5) What are the main problems in controlling the use of wetlands?

   . funding
   . lack of data
   . lack of jurisdiction
   . lack of expertise
   . lack of public support
   . lack of private sector cooperation/understanding of need

. monitoring and enforcement
. Scope of coverage of different kinds of wetlands or of different kinds of development activities by wetland programs
. Problems in balancing development and protection of wetlands in permitting decisions
. Legal authority (lack of enforcement of existing laws?)
. Conflicting state laws
. Lack of coordination among State agencies, between State and federal agencies, or between State and local authorities

If possible, describe and rank in importance these or other applicable problems.

6) If not described previously:

a) List approximate numbers and types of personnel, and budgetary allocations devoted to State wetland protection efforts. Have there been major changes in the levels of such resources over the last five years? If possible, list the minimum and maximum funding and personnel levels for this period and give figures for this fiscal year and projections for next year. (If quantitative answers are not available, "guestimates" will be helpful.)

b) Describe the role, if any, federal funding and technical assistance play in your State wetland protection programs. What problems, if any, would you anticipate if the federal government reduces assistance to your state in these areas?

7) What interaction or coordination does your agency have with federal agencies or local governments in wetlands regulation? Does it aid local control?

8) In your opinion, how important has the Section 404 permit process been in protecting wetlands in the state, compared to State and local regulatory activities. To what extent does 404 offer protections not offered by the State? To what extent does the State offer protections not offered by 404? How much duplication, if any, exists between 404 and State programs. If duplication exists, what have been its advantages and disadvantages?

9) Given the combination of federal and State programs, are there any major gaps in coverage of activities that have major effects upon wetlands in your state?

10) On the average, how long does it take to conduct:

. 401 certifications? (for DOE only, this is a certification that material to be discharged is acceptable under state water quality standards)
. 404(t) determinations?
. Permitting under State programs?

11) Has your agency made any estimate of the costs to permit applicants of State and/or federal wetland permitting programs? If so, what were the results?

Program Changes

1) Several Congressional bills have contained provisions that would limit Corps 404 permitting authority to navigable waters, usually defined as "all waters which are used, or are susceptible to use in their natural condition or by reasonable improvement, as a means to transport interstate or foreign commerce shoreward to their ordinary high water mark, including all waters which are subject to the ebb and flow of the tide shoreward to their mean high water mark." Alternative limitations of Corps authority suggested by various sources include restriction to Phase I waters (i.e., wetlands adjacent to navigable waters would be included).

   Do you agree with any of the above proposals? What effect, if any, would they have on state or local wetland programs, and on the state's wetlands? If Corps authority were to be limited to any of the extents summarized above, how would your agency react?

2) Do you have any suggestions for improvement of the 404 program?

3) Do you think Washington state is interested in assuming all or part of the Section 404 authority? What about local governments? Rather than assuming 404 authority, would Washington State (or your agency) prefer an arrangement in which the Corps via a general permit/Memorandum Of Understanding de facto delegates permitting authority to the state or local government, with minimal Federal review?

4) What would be the advantages and disadvantages if the state or local government were to take over all or part of the Section 404 process?

5) Does the State desire changes in:

   - EPA regulations for State assumption (e.g., Corps and EPA oversight procedures, the role of U.S. Fish and Wildlife Service and National Marine Fisheries Service, etc.)?

   - Levels of federal assistance for program development or program implementation? (What proportion of the costs of 404 program development and administration should the federal government be responsible for?)

   - Changes in Section 10 of the Rivers and Harbors Act of 1899?

   - Geographic scope of State responsibility (for example, does your state seek to assume 404 authority for Phase I as well as Phases II and III waters)? Do you think that states, if they so desire, should be able to take over Phase I waters but leave Phases II and III to federal jurisdiction? or vice versa?

Describe these and other actions, if applicable. If all of your preferences were implemented, would your State assume 404? If all except funding were implemented? If all except funding and geographic scope?

Do you have suggestions on posible funding sources (e.g., OCS leasing revenues) that could be used to provide states with funding to carry out 404 responsibilities?

6) Should some other federal agency take over all or part of the 404 process? Which one? What would be the advantages? Disadvantages?

QUESTIONNAIRE CONCERNING THE SECTION 404 PROGRAM
AND OTHER WETLANDS REGULATORY PROGRAMS
(LOCAL AGENCIES)

1) Has there been concern about wetlands in your city (county)? Does your jurisdiction have an expressed policy for wetlands protection? What benefits does your jurisdiction gain from wetland development or protection?

2) What are the primary means used by your city (county) to control development or activities in wetlands?

3) Have there been any changes in concerns or attitudes about wetland regulations in the last 10-15 years? How much of those changes can be attributed to Section 404 Regulations? Other federal or state regulations?

4) What proportion of wetlands in your city (county) is regulated?

5) What are the main problems in controlling the use of wetlands?

   . funding
   . lack of data
   . lack of jurisdiction
   . lack of expertise
   . lack of public support
   . lack of private sector cooperation/understanding of need

6) What interaction or coordination does your city (county) have with state or federal agencies in wetlands regulation? Does it aid local control?

7) What kinds of data or resources do local governments need to implement programs?

   . maps or photographs
   . classification systems

Program Changes

1) Several Congressional bills have contained provisions that would limit Corps 404 permitting authority to navigable waters, usually defined as "all waters which are used, or are susceptible to use in their natural condition or by reasonable improvement, as a means to transport interstate or foreign commerce shoreward to their ordinary high water mark, including all waters which are subject to the ebb and flow of the tide shoreward to their mean high water mark". Alternative limitations of Corps authority suggested by various sources include restriction to Phase I waters (i.e., wetlands adjacent to navigable waters would be included).

   Do you agree with any of the above proposals? What effect, if any, would they have on state or local wetland programs, and on the state's

wetlands? If Corps authority were to be limited to any of the extents summarized above, how would your City (County) react?

2) Do you have any suggestions for improvement of the 404 program?

3) Do you think Washington state is interested in assuming all or part of the Section 404 authority? What about local governments? Rather than assuming 404 authority, would the City (County) prefer an arrangement in which the Corps via a general permit/Memorandum Of Understanding de facto delegates permitting authority to the state or local government, with minimal Federal review?

4) What would be the advantages and disadvantages if the state or local government were to take over all or part of the Section 404 process?

5) Should some other federal agency take over all or part of the 404 process? Which one? What would be the advantages? Disadvantages?

QUESTIONNAIRE CONCERNING WETLANDS REGULATIONS
(PRIVATE DEVELOPERS)

1) What is your understanding of how wetlands are regulated by the federal government? State government? Local government? What about indirect regulation through sensitive areas controls, floodplain management, or drainage control?

2) Are you familiar with the Corps of Engineers Section 404 authority? Section 10 authority?

3) Are you familiar with the Section 404 process? Have you been involved in it?

4) Are you familiar with the "pre-application" conference at the Corps? Have you been involved with it? Was it of value?

5) Has the Section 404 process resulted in changes to any of your development plans? Were they beneficial or detrimental?

6) Have you experienced delays in development approval as a result of wetland regulation? as a result of 404/10? as a result of state regulations? as a result of local regulations? If so, how long were delays?

7) Have you experienced increased costs as a result of wetland regulation? as a result of 404/10? as a result of state regulations? as a result of local regulations? If so, can you estimate the costs?

8) Have wetlands regulations ever been beneficial to project development?

9) Would you consider wetlands restoration as a mitigating measure? If not, why not? If so, do you have any perception of costs?

10) Would you prefer wetlands regulation at the federal, state, or local level? At which level would the cost impacts be least?

11) Have you seen any changes in wetland regulation during the last 10 years? Have you noticed any changes in the regulatory process?

APPENDIX B

Federal Agencies

Corp of Engineers
- Sam Casne
- Gerald Keller
- Steve Martin
- Fred Weinman

Environmental Protection Agency
- Carl Kasebaum
- Ann Land
- Ron Lee

National Marine Fisheries Service
- Jim Bybee
- Jackie Wyland

U.S. Fish and Wildlife Service
- Dave Staut
- Rex VanWormer

State Agencies

Department of Ecology
- Pat Lee
- Don Peterson
- Leighton Pratt
- Rod Sakrison

Department of Fisheries
- Earl Finn
- Phil Kauzloric

Department of Game
- Bob Zeigler

Department of Natural Resources
- Rene Herrara

Local Agencies

King County
- Dick Butler
- Andy Ruotsala

Snohomish County
- Denise Lallo
- Steve Rice
- Gary Reirsgard

City of Kirkland
Stephanie Warren

City of Seattle
Rosemary Horwood

Grays Harbor Regional Planning
Pat Dugan

Development Interests

Stan Lattin - Port of Grays Harbor
Ron Jensen - Hugh Goldsmith and Associates, Inc.
Marilee Diefenderfer - Narod, Ltd.

MICROCOPY RESOLUTION TEST CHART
NBS - 1010a
(ANSI and ISO TEST CHART No. 2)

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